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Influence of Vaccination Upon Age Distribution of Poliomyelitis¹

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SINCE January, 1952, when a modified system of poliomyelitis reporting was introduced in British Columbia, detailed data have been available upon each new case reported. From this accumulated data, knowledge both informative and of practical value has been realized. Thus it was learned that of a total of 1,371 poliomyelitis cases reported during 1952 and 1953, 61.1% were in the age-group 16 years and under; 26.6% in the age-group 17-30 years; and only 12.3% in those 31 years of age and over. These findings served to emphasize the magnitude of the poliomyelitis problem in the age-group 0-16 years. From a study of grouped age-specific attack rates for each of these two years, it was known that these followed relatively continuous distribution curves with the peak attack rates in the 5-8-year age-group (1). This latter finding was the determining factor responsible for the subsequent decision to commence mass poliomyelitis vaccination in this particular age-group with the prime objective being to confer protection upon all children 0-16 years.

When limited supplies of vaccine, sufficient to provide British Columbia with a quantity for approximately 50,000 children, became available in the spring of 1955 the decision was made early to place the vaccination program under epidemiological control in order to evaluate the effectiveness of Canadian-produced vaccine under field conditions. In accordance with the recommendations of the joint Federal-Provincial conference of epidemiologists held at Ottawa in May, 1955, the evaluation study was based solely upon the occurrence of paralytic cases in the study and control populations owing to the difficulties associated with the diagnosis of non-paralytic disease. In a previously published report (2) upon the paralytic poliomyelitis experience

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in British Columbia of the vaccinated population (comprising 71.7, 86.9 and 71.1%, respectively, of 5-, 6- and 7-year-old children, all of whom were considered eligible for vaccine) as compared with the control population (balance of 5-, 6- and 7-year-olds who did not accept vaccine), there was a marked difference in attack rates in favour of the vaccinated children. These results were considered sufficiently encouraging to justify further investigation into the effectiveness of the vaccine by a confirmatory type of study.

Reference has been made earlier to the fact that in the immediate prevaccination era in this province, grouped age-specific attack rates based upon all cases of poliomyelitis (paralytic and non-paralytic) reported, were observed to follow relatively continuous distribution curves with the peak attack rates in the 5-8-year age-group. By correcting this data for paralytic cases only to conform with the criteria laid down at the Ottawa conference, and by comparing the age contours of paralytic attack rates for all children 0-16 years in the prevaccination (1952-54) and vaccination (1955) years, it was hoped to demonstrate a shift in age pattern in the 5-, 6- and 7-year-old children but relatively no shift in the remaining age-groups. Such a shift was to be deemed consistent with the belief that poliomyelitis vaccine was effective to the extent of reducing the paralytic attack rates in the 5-, 6- and 7-year-olds, the majority of whom had been vaccinated only in 1955.

In early 1956, a retrospective study along these lines was undertaken:

1. Tabulations of paralytic cases with age-specific paralytic attack rates, by yearly age-groups from under 1 year to 16 years, were prepared for 1952, 1953, 1954 and 1955 (Table I).

TABLE I—AGE-SPECIFIC PARALYTIC POLIOMYELITIS ATTACK RATES,
BRITISH COLUMBIA 1952-1955
(Rates per 100,000 Population)

Age Years	1952		1953		1954		1955		1952-54 Average Rates
	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	
Under 1	26	91.8	19	63.4	1	3.2	3	9.2	52.8
1	3	11.3	18	63.7	6	20.0	9	28.4	31.7
2	12	45.7	26	96.3	3	10.6	7	23.1	50.9
3	21	82.7	25	93.8	6	22.2	13	45.5	66.2
4	17	67.3	33	126.3	6	22.6	7	25.6	72.1
5	25	106.5	30	118.2	4	15.5	4	14.8	80.1
6	15	67.5	23	97.5	6	23.4	5	19.1	62.8
7	16	75.5	11	49.2	8	33.5	4	16.5	52.7
8	21	104.2	19	85.2	7	30.9	4	16.5	73.4
9	10	52.2	14	69.1	6	27.8	7	30.5	49.7
10	5	27.3	15	77.4	3	14.6	4	18.3	39.8
11	7	40.4	12	65.1	1	5.1	7	33.6	36.9
12	10	60.5	9	51.3	1	5.4	2	10.1	39.1
13	13	82.2	7	41.8	—	—	3	15.8	41.3
14	17	111.7	10	62.4	4	23.6	3	16.6	65.9
15	10	67.0	6	38.4	1	6.0	7	40.4	37.1
16	7	48.1	9	59.4	2	12.5	2	12.0	40.0
Total cases (under 16 yrs.)	235	67.0	286	77.1	65	16.7	91	22.2	53.6

2. Age-specific paralytic attack rates, averaged for the prevaccination years (1952-54), and for the study year (1955), were grouped to separate the study population (vaccinated 5-, 6- and 7-year-olds in 1955) from the control populations (remaining children 0-16 years in 1955, and all children 0-16 years in 1952-54) (Table II).

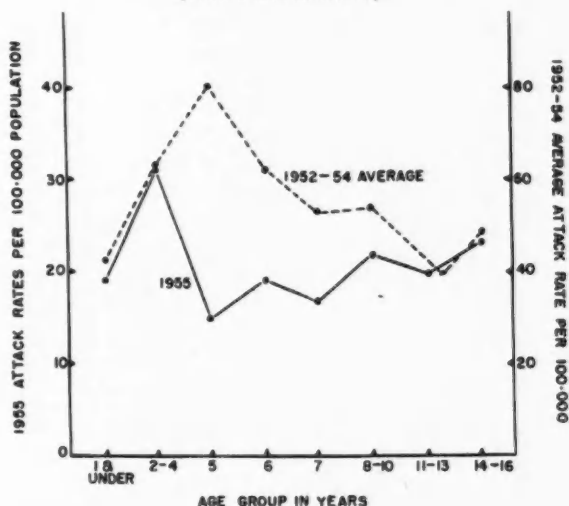
TABLE II—GROUPED AGE-SPECIFIC PARALYTIC POLIOMYELITIS
ATTACK RATES, BRITISH COLUMBIA 1952-1955
(Rates per 100,000 Population)

Age Group Years	1955 Rates	1952-1954 Average Rates
1 and under	18.8	42.2
2-4	31.4	63.1
5	14.8	80.1
6	19.1	62.8
7	16.5	52.7
8-10	21.8	54.3
11-13	19.8	39.1
14-16	23.0	47.7

3. Because of wide annual variations in the paralytic attack rates, the overall 1955 attack rate (22.2 per 100,000 children 16 years of age and under) was compared with the corresponding 1952-54 attack rate (53.6). From this comparison, it was noted that the 1955 rate was 41.4% or approximately half of the averaged rate for the three control years, 1952-54.

4. The data in Table II were then plotted as distribution curves, 1952-54. imposed, with the 1955 curve on half the scale of the 1952-54 average curve to compensate for the diminished overall attack rate in 1955 (Figure).

AGE-SPECIFIC PARALYTIC POLIOMYELITIS ATTACK RATES, BRITISH COLUMBIA,
FOR 1955, AND AVERAGE 1952-1954
(Note Different Scales)



Inspection of the two distribution curves of paralytic attack rates reveals that the curves are similar in many respects with the experience of most age-groups in 1955 being comparable to their previous experience in 1952-54. The single exception noted is a marked downward shift in the curve for the 5-, 6- and 7-year-olds in 1955. Since only these children, or at least a majority of them, received poliomyelitis vaccine in 1955 it is reasonable to assume that this downward age-shift, not manifest in the other age-groups, reflects a reduction in paralytic attack rates in these children due to vaccination. This finding may be regarded as confirmatory evidence of the effectiveness of the vaccine as used in British Columbia in 1955.

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AIR POLLUTION AND SMOKE CONTROL¹

"Air pollution is a serious, dangerous and costly curse of civilized living. It presents a problem which is gigantic, complex and constantly growing with the increasing population, urbanization and industrialization. The problem of air pollution control is completely different from what it was ten, or even five, years ago. In the last five years the petrochemical industry has developed in amazing ways, the chemical manufacturing industry has been growing at a faster rate than all the rest of our industries, and the number of automobiles on our roads has increased by more than 50 per cent. What we are really worried about is not so much ordinary smoke, but the hundreds of other kinds of air pollution, many of which are invisible. Action to prevent air pollution must be taken long before the situation becomes severe enough for the general public to realize how much they are being affected."

¹Final Report of the Select Committee on Air Pollution and Smoke Control of the Legislative Assembly of Ontario, 1957. Alfred H. Cowling, M.P.P., Chairman; Dr. Frederick A. Evis, Secretary.

Thirty-five Cases of Human Anaerobic Infections¹

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THE anaerobic bacteria of interest in medicine may be divided into two classes based on their natural habitat, morphology and physiology. The first class comprises spore-forming anaerobes among which are highly pathogenic micro-organisms like the Clostridia of the gaseous gangrenes and tetanus which frequently occur in war wounds. The second class is liable to be overlooked because it comprises delicate, non-sporulating bacteria rather easily outnumbered by faster growing anaerobes. This group is often referred to as "La flore de Veillon", and includes gram positive and negative rods and cocci. There is an important difference between the two classes. The sporulates display a powerful enzymatic system and the non-sporulating are devoid of any known toxin. These, however, may be virulent but the exact nature of their pathogenic power is not known. This phenomenon has been particularly revealed by the work of A. R. Prévot (1). The second class, the microbes of "La flore de Veillon", are endogenous, they are normally found in the natural cavities of man and animals. The natural defences of the organism keep the micro-organisms under control, but qualitative and quantitative changes in glandular secretions, local trauma, mechanical obstruction and "congestion a frigore" are factors necessary for these micro-organisms to cause infection.

Technique

The material examined consisted of pus collected over a period of three years (1953-54-55) from different hospitals in the city of Quebec. The material was given a routine direct examination after gram-staining. When necessary a dilution of the material was made and cultures prepared. Cultures were made by two methods at the same time, Anglo-Saxon methods, using the A.C. medium, or Brewer's thioglycollate inoculated with presumed mono-microbial material, and the French method using "la gélose profonde V. F. de Prévot" was used in isolating from mixed species. This deep agar is prepared using pepsin digested beef and liver broth, solidified with agar (2).

Commercial nutrient broths and purified agar failed in our hands to give growth of some anaerobes. McIntosh and Fildes anaerobic jars were also used for the isolation of non-motile micro-organisms. Identification has been made entirely according to the methods of the French school. These methods are

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described in detail by Lebert and Tardieux (2). The classification was made according to Prévot (18).

Few media are needed, mainly V. F. broth with the addition of glucides, nitrates or sulfites and proteins such as gelatine, coagulated serum, natural milk. The media are filled into soft glass tubes drawn in the flame and "vacuum sealed". The biochemical characters are studied using the following procedure: a 1000 cc. Erlenmeyer flask of V. F. broth is seeded with a single colony and incubated for about 10 days. The culture is then distilled successively in the presence of alkali and acid in order to extract the alcohol, aldehydes, ketones, and ammonia produced by the organism. The usual tests and dosages are then made. Final results are recorded and give a minimum identification chart presenting the physiological and biochemical characters. Experimental results of inoculations in animals and immunological findings are recorded. This long and meticulous work is essential in properly identifying saprophytic species and strains which do not induce an experimental infection in laboratory animals.

Our findings relate to the bacteriological analysis of thirty-five isolations and these are divided into two groups of infections with pure strict anaerobes and mixed infections (strict anaerobes mixed with common aerobes).

INFECTIONS WITH PURE ANAEROBES—Table 1

In these infections, 19 in number, one or several species were found. Identification was attempted with all strains (30 strains) but only 10 have been thoroughly identified. The principal difficulties encountered were mainly lack of vitality of some strains and occasional contamination. Some strains progressively adapted themselves to facultative anaerobiosis and could not be satisfactorily identified. The most frequent species found in our study belong

TABLE 1—INFECTIONS WITH PURE ANAEROBES—19 CASES

Origin	Species
1. Otitis	<i>Streptococcus anaerobius</i> . <i>Veillonella discoides</i> . <i>Fusiformis</i>
2. Abscess of Bartholin's glands	<i>Ristella</i>
3. Abscess of anal margin	<i>Ristella trichoides</i> . <i>Streptococcus</i>
4. Acute appendicitis	<i>Clostridium oedematis benigni</i>
5. Abscess of abdominal wall	<i>Streptococcus lanceolatus</i> . <i>Spherophorus</i> . <i>Fusiformis</i>
6. Subhepatic abscess	<i>Streptococcus anaerobius</i>
7. Chronic leukorrhea	<i>Ramibacterium</i> . <i>Spherophorus</i>
8. Chronic diarrhoea	<i>Ramibacterium</i>
9. Enteritis	<i>Ramibacterium</i> . <i>Fusiformis</i> . <i>Spherophorus</i>
10. Deep cervical abscess	<i>Staphylococcus aerogenes</i> . <i>Streptococcus</i>
11. Leukorrhea	<i>Streptococcus evolutus</i>
12. Abscess of breast	<i>Staphylococcus anaerobius</i>
13. Paradental cyst	<i>Spherophorus</i> . <i>Ramibacterium</i>
14. Prostatitis	<i>Staphylococcus</i>
15. Acute meningitis	<i>Ramibacterium</i>
16. Axillary lymph node	<i>Spherophorus</i>
17. Abscess anal margin	<i>Spherophorus</i> . <i>Streptococcus</i>
18. Cervical phlegmon	<i>Streptococcus foetidus</i>
19. Cervical adenitis	<i>Spherophorus</i>

to the genera *Streptococcus*, *Ramibacterium* and *Spherophorus*. Table 2 shows the anaerobic streptococci found in 8 out of our 19 cases of pure anaerobic infections.

TABLE 2—ANAEROBIC STREPTOCOCCI FOUND IN PURE ANAEROBIC INFECTIONS

Origin	Species
1. Otitis	Anaerobius
2. Abscess, abdominal wall	Lanceolatus
3. Leukorrhea	Evolutus
4. Subhepatic abscess	Anaerobius
5. Cervical phlegmon	Foetidus
6. Abscess, anal margin	Not identified
7. Deep cervical abscess	Not identified
8. Abscess, anal margin	Not identified

Genus *Streptococcus*

The anaerobic streptococci are very frequent though according to Prévot (3) the use of antibiotics has considerably reduced their frequency. We have found the usual common species. These cocci are ubiquitous and are often present in the ears, throat and genitalia. Their longevity is rather good but some show more quickly a tendency to facultative anaerobiosis. This evolution in culture is rather typical of the *Streptococcus evolutus* found in Meleney's ulcer, which is an extensive necrosis of the skin. The infection is particularly severe when the *Streptococcus evolutus* is associated with *Staphylococcus aureus*.

The same species is said to play a part in endocarditis (Lemierre)(5). Lemierre has isolated a strain by blood culture in a case of endocarditis. These streptococci are very often found in normal vaginal secretions and may play a predominant part in endogenous post-partum infections (Lopez)(4). Anaerobic streptococci were also reported in myositis by Hayward during the second war (6). In general, these organisms are very common and are involved in a large number of focal infections.

Genus *Ramibacterium*

The ramibacteria are gram positive non-motile rods showing pseudo-ramifications. The type species is *R. ramosum*.

In five infections ramibacterium was found as a pure anaerobe. As these micro-organisms are delicate and exacting in culture it is difficult to complete identification.

The French school has emphasized the importance of this genus in human pathology, considerable clinical work has been done in France by Lemierre (7) and Prévot (8). Prévot (9) in 1949 made a general study of the "ramibacterioses", and observed that practically no school except the French has reported infections caused by a ramibacterium. However, Prévot believes the ramibacterium to be widespread (10) and suggests that technical difficulties in isolation and perhaps more of determination may be the reason. Also, some cases of "ramibacteriose" may have been erroneously reported as cases of actinomycosis.

Genus *Spherophorus*

Spherophorus was found in pure anaerobic infections in seven cases. These were: leukorrhea, enteritis, abscess (abdominal wall), paradental cyst, axillary lymph node, abscess (anal margin) and cervical adenitis.

These gram negative non-motile micro-organisms were very polymorphous, appearing as elongated or short swollen rods. They are characterized by the presence of spheroids which play a part in the life cycle of the microbes. Bergey classified the *spherophorus* in the genus *Bacteroides* (19). The *spherophorus* are frequent in natural cavities, especially in the intestinal tract and the vagina. They cause focal or local necrotic infections which tend to spread and form thrombo-phlebitis, septico-pyæmia and metastatic abscesses. The process was described by Lemierre in 1936 (11). The original infection often originates in the tonsils and the genitalia.

Much attention has been given to the spheroids by Dienes (12) in 1941, and Dienes and Smith (13) in 1942. These authors have studied the germination of the spheroids, and hold them as organs of reproduction. They also pointed out their resemblance to the "L" forms described by Klieneberger (14), and were able to demonstrate the presence of nuclear structures in these spheroids (15).

In 1950, Lemierre (16) reported clinical and therapeutic observations made in six cases of "spherophorose" following appendicitis, and found penicillin to be very effective. Murray, Fisher and McKusick observed six cases in which terramycin and aureomycin were more effective than penicillin (17).

Other Genera

Micro-organisms of the following genera were found in our study: *Fusiformis*, two cases; *Ristella trichoides*; *Zuberella* and *Veillonella*; *Staphylococcus*, two cases.

INFECTIONS WITH STRICT ANAEROBES MIXED WITH AEROBES—Table 3

In these cases, 16 in number, the anaerobes encountered were about the same as those found in pure anaerobic infections. The associated facultative anaerobes were: *Streptococcus pyogenes*, *Enterococcus*, *Proteus vulgaris* and *mirabilis*.

In six cases, *Staphylococcus aureus* was abundant in direct smears. The anaerobes found are presented in Table 4.

It is very difficult to say at first sight which micro-organism started these infections; however, we know that the microbes of "La flore de Veillon" are always present in natural cavities, and there is good presumption that they initiate the infection. In the course of the infectious process, they may easily be outnumbered by pathogenic or saprophytic facultative anaerobes. Moreover, being quite sensitive to antibiotics and antiseptics they may disappear completely. It is reasonable to believe that a number of focal staphylococcal infections are originally anaerobic ones. We are inclined to believe that our nineteen cases of pure anaerobic infections would have appeared as mixed infections had we not studied them from the beginning of the infection.

TABLE 3—ANAEROBES MIXED WITH AEROBES—16 CASES

Origin	Species
1. Abscess, recto-vaginal fossa	<i>Streptococcus putridus</i> . <i>Bacillus bifidus</i> . <i>Staphylococcus aureus</i>
2. Phlegmon of tonsils	<i>Spherophorus</i> (freundt?). <i>Streptococcus pyogenes</i>
3. Bronchitis	<i>Veillonella</i> . <i>Staphylococcus aureus</i>
4. Otitis	<i>Fusiformis</i> . <i>Staphylococcus aureus</i>
5. Broncho-pneumonia	<i>Ramibacterium</i> . <i>Spherophorus</i> . <i>Streptococcus pyogenes</i>
6. Acute purulent appendicitis	<i>Ramibacterium</i> . <i>Bacterium coli</i>
7. Pharyngitis	<i>Ramibacterium</i> . Yeasts. <i>Staphylococcus aureus</i>
8. Bartholinitis	<i>Streptococcus faecalis</i> . <i>Streptococcus putridus</i>
9. Meleney's ulcer, abdominal wall	<i>Streptococcus evolutus</i> . <i>Proteus vulgaris</i>
10. Broncho-pneumonia	<i>Fusiformia</i> . <i>Veillonella</i> . <i>Streptococcus</i> . <i>Staphylococcus aureus</i>
11. Enteritis	<i>Ramibacterium</i> . <i>Proteus vulgaris</i>
12. Chronic diarrhoea, Enteritis	<i>Ramibacterium</i> . <i>Streptococcus</i> . <i>Bacterium coli</i>
13. Appendicitis	<i>Welchia perfringens</i> . <i>Fusiformia</i> . <i>Bacterium coli</i>
14. Salpingitis	<i>Zuberella serpens</i> . <i>Streptococcus faecalis</i> . <i>Bacterium coli</i>
15. Perineal abscess	<i>Ristella</i> . <i>Staphylococcus aureus</i>
16. Abscess of the anal margin	<i>Ristella putredinis</i> . <i>Staphylococcus aureus</i>

TABLE 4—MIXED INFECTIONS—SIX CASES WITH STAPHYLOCOCCUS AUREUS

Origin	Associated anaerobes
Broncho-pneumonia	<i>Veillonella</i> . <i>Fusiformis</i> Anaerobic streptococci
Otitis	<i>Fusiformis</i>
Pharyngitis	<i>Ramibacterium</i> . <i>Spherophorus</i>
Abscess, anal margin	<i>Ristella</i>
Broncho-pneumonia	<i>Veillonella</i>
Recto-vaginal fossa, abscess	<i>Streptococcus putridus</i>

SUMMARY

Of thirty-five cases of infections, nineteen were caused by strict anaerobes, and sixteen by anaerobes mixed with common aerobes. Technical difficulties made impossible the identification of a number of these strains. The species identified were all known pathogens. The results show the relative frequency of "La flore de Veillon".

Meticulous study employing the best procedures is necessary to find these microbes, especially when dealing with infections of the ears, throat, intestines and genitalia, which are the selective habitat of "La flore de Veillon". Even in staphylococcal infections this type of study must be scrupulously pursued and the possibility of a primary anaerobic infection be remembered or a false diagnosis of a primary staphylococcus infection will be made. It is hoped that the puzzling pathogenicity of these endogenous infections will some day be better understood before antibiotics entirely modify the anaerobic flora.

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HEALTH AND DEMOGRAPHY¹

"The past, present and probable future of the population—in terms of total number, fertility and mortality trends, age and sex composition, occupation, mobility, and other measurable characteristics—make up the special domain of demography.

Public health has been enormously effective in conserving human life, particularly in the early and middle years. It is demonstrable that public health has also been highly effective in eliminating or curtailing a wide variety of diseases that used to be rampant.

What we are primarily faced with now is the widespread occurrence of illnesses without known pathogens or clear-cut modes of transmission or established ways of protecting the host. In this broad group come most of the chronic diseases as well as a great range of more or less 'minor' afflictions which are not traditionally within the domain of public health but which reach substantial totals. Included in the latter group are gastrointestinal disorders, dull headache, unexplained diarrhoea, chronic fatigue and the rest of the long list of functional disturbances that seldom destroy life itself but interfere with the productivity and full self-development of a large number of people. These arise from the life situations of the people afflicted.

It seems indeed evident that we must work simultaneously in two directions—to study the factors, of whatever sort, that incline people toward the range of abnormality and pathology; and to study the range and characteristics of factors that incline people toward positive health or fitness."

¹From "Health and Demography" by Halbert L. Dunn, M.D., Chief, National Office of Vital Statistics, U.S. Department of Health, Education, and Welfare, Washington, D.C.

Water Usage and Sewage Disposal

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IT would appear that in this area at least a reassessment is needed of the quantities of water used for domestic purposes since the design of private sewage disposal systems has been based upon the use of 25-50 gallons per person per day. This amount may have been ample in the past but it is no longer adequate. Data of the amount of water used in private dwellings are very limited. It is in the areas in which septic tanks with disposal tile systems are used that problems are met, particularly where soil conditions are such that absorption is slow or almost non-existent. The following figures are typical of this community for winter and early spring: *Family 1* four persons used 6,000 gallons in 2 months; *Family 2* four persons used 10,000 gallons in 2 months; *Family 3* five persons used 7,500 gallons in 2 months; *Family 4* four persons used 10,500 gallons in 2 months; *Family 5* five persons used 11,500 gallons in 2 months; *Family 6* five persons used 12,000 gallons in 2 months. *Family 7* three persons used 4,400 gallons in November-December, 6,400 in January-February, 8,400 in March-April, 8,600 in May-June. *Family 8* five persons used 12,400 gallons in November-December, 14,400 in January-February, 13,000 in March-April, 15,200 in May-June. The last two families were in a new sub-division where the disposal problem was acute and all had trouble during the spring run-off and rains.

The variations are related to the types of individuals and to the use of modern facilities in the home. In the

case of *Family 1* the facilities consisted of a complete bathroom, kitchen sink, laundry tubs and an ordinary wringer-washer. The laundry facilities were used once or at most twice per week. Families 2 and 4 had fully automatic washing machines and used the equipment four times per week or every day. A change of occupancy could, therefore, increase or decrease the amount of water used. In new subdivisions further modernization is to be expected and water consumption will be increased.

Another factor is the greater availability of water in recent years. Water systems have been expanded through the acquisition of new sources of supply, by increasing the carrying capacity of mains and by extending systems to cover larger areas. It is true that much of this is due to increasing land occupancy yet the entire concept of living has changed. In the modern home, automatic washing machines, dishwashers, and garbage grinders increase the demand for water and place increased loads on septic tanks. One can conclude that water consumption for domestic use is increasing and the estimate of 25-50 gallons per day per person in designing private sewage disposal systems needs revision. The design of septic tanks and disposal units should be suitable to the size of the lot. Even where sewers are available it is possible that increasing quantities of water will be carried and the designing of sewers may also need review.

In this municipality, a new by-law has been passed directing that where

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single chamber septic tanks are in use they be changed to double chamber tanks. The chief reason for this is that on discharge a considerable stirring up of the contents of the tank may occur and a spilling over of semi-solids, the subsequent blocking of the tile reduces the effective distribution of the effluent. It has been noted that since the introduction of the new system in 1954 the number of complaints has decreased but where the old single chamber tanks are in use the complaints continue. For further control of installations an amendment has been added to the new by-law requiring owners or contractors to submit three plot plans showing the location of residence, septic tank and disposal fields. Before a building permit is issued properties are checked and, if necessary, plans are altered to suit disposal areas. Plot plans must be signed by the engineer and the plumbing inspector.

Land Drainage

Recommendations were made to the Corporation of the District of Saanich relating to the size of lots in sub-divisions based on the nature of the subsoil for disposal beds, local conditions and the floor area of the buildings, driveways, etc. An amendment was passed establishing the minimum size of a lot as 8,400 sq. ft. of which 1,000 sq. ft. must be reserved for the disposal of effluent. The layout of lots and roads will be planned to permit subsequent subdivision when and if water and sewers are available.

Little thought has been given in the past to land drainage in the planning of sub-divisions and although it is true that many of the private sewage installation problems are due to lack of knowledge on the part of the contractors many problems will continue to arise through lack of adequate drainage of surface water. In building

roads in any area the engineer is concerned with surface water because this can ruin a good road. To prevent damage, the road is ditched on one or both sides and is built with a crown so that surface water may readily run off. If this is so essential in road building, is it not reasonable that the same engineer (who is usually the approving officer of sub-divisions) should also provide for the problem of surface drainage? Unless drainage can be provided, approval of a sub-division plan should be withheld. When considering sub-divisions intended for residential purposes one must think of the land not in its undeveloped state but when occupied. The ground is often changed in contour and roofs collect the rain and run it off into a more limited area. Into the same receiving areas the endeavour is made to place the waste water from domestic use into a septic tank and disposal system. This tends to create a bogged-down condition under which no disposal system can be expected to function for twelve months of the year. Some land in the low areas may remain soft most of the year since the ground water gravitates to the lowest point. Again, many properties are lower than the road ditches and foundation or drainpipe water cannot be drained into such ditches. Generally speaking, however, most properties can be adequately drained when fitted into an overall drainage scheme. This should be planned as new sections are prepared for sub-division. Once a survey has been made and a main scheme prepared, each sub-division home-owner should be responsible for provision of connections to the main scheme.

In these ways, an endeavour is being made to find solutions to a vexing problem. I hope our findings may be of interest to those concerned with the installation of private sewage disposal systems.

Canadian Journal of Public Health

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REPORT ON SALARIES AND QUALIFICATIONS OF PUBLIC HEALTH PERSONNEL (Third Revision)

IN 1946 the Dominion Council of Health, advisory body to the Department of National Health and Welfare, requested the Canadian Public Health Association to carry out a survey of salaries and requirements of public health personnel in Canada and to recommend basic salary schedules, with attendant qualifications, for technical and professional public health positions. The survey subsequently undertaken included federal, provincial and city departments and health units.

In 1948 a second survey was made and the report revised. A third survey was undertaken in 1951. In this report it was noted that the increases recorded were not comparable with those received by other workers in Canada and would not compensate for the increased cost of living. In each report the salaries suggested for the various groups were the minimum salaries that should pertain for a particular position or grade in any part of Canada. Educational qualifications and experience requirements were outlined and minimum salary levels were suggested for each group or grade of position.

At the annual meeting in Saint John, New Brunswick in 1956 the Committee was requested to conduct a survey again and make appropriate recommendations. Data were collected from all the official agencies with the exception of five health units and four cities. The 1956 survey indicates that there has been no marked increase in the number of physicians engaging in public health work during the past five years. This finding reflects the continuing shortage of physicians trained in public health and the trend toward the enlargement of health unit areas in order to utilize available personnel to the maximum. While there are outstanding examples of improvement in salary ranges, the overall Canadian picture can not be considered in any way competitive with other similar fields of endeavour nor attractive to a student contemplating professional public health service.

The Association is deeply indebted to Dr. J. H. Baillie for his important leadership in the conduct of each of the four surveys and to the Honorary Treasurer, Dr. William Mosley and our Honorary Secretary, Dr. G. W. O. Moss, for their important part in this report. The technical assistance of Mrs. O. Munro has again been most valuable.

RECOMMENDED QUALIFICATION REQUIREMENTS AND MINIMUM SALARIES FOR PUBLIC HEALTH PERSONNEL IN CANADA (THIRD REVISION)

IN 1946 the Canadian Public Health Association established a Committee on Salaries and Qualifications of Public Health Personnel. At the request of the Dominion Council of Health this committee carried out a Canada-wide survey of official public health agencies.

The Committee's report (Canad. J. Pub. Health, 1947, 38: 1) contained data regarding the various salary ranges offered for the different types of professional and technical personnel that make up the official public health agency. Information about factors other than salary that affect income was included.

The second part of the report contained recommended educational qualification and experience requirements for the majority of jobs in health agencies and a suggested *minimum* salary level for each group or grade of position.

This report was adopted by the Dominion Council of Health on November 6, 1946, and distributed by the Department of National Health and Welfare.

The Executive Council of the Canadian Public Health Association, in approving the report at the annual meeting in 1947, recommended that the report be revised in 1948 in order to keep it up to date with present trends.

At the annual meeting of the Canadian Public Health Association in Montreal, May 29-31, 1951, the Committee on Salaries and Qualifications of Public Health Personnel was requested to revise the 1948 report.

At the annual meeting in 1956 the Committee was requested to review again the salaries being paid public health personnel in Canada. The 1951 report stated that the major problem facing the official health agencies at that time was the recruitment and maintenance of an efficient, qualified professional and technical staff. This statement would appear to be still valid. Data were collected in the Fall of 1956 for the 1957 revision from all the official agencies with the exception of five health units and four cities. Consequently the drop in total numbers in some of the categories does not reflect the true picture in Canada, e.g., there were 716 physicians shown as employed full time in the 1951 survey, there are 40 fewer shown as employed full time in 1956. Those agencies not reporting may account for part of this drop. One thing certain, there has been no marked increase in the number of physicians in the intervening five years. Most agencies report that they are still understaffed to a critical degree.

The 1951 report stated: "While in most cases there has been an over-all increase in the salaries paid in 1951 in comparison with those in 1948, the increases are not comparable with those received by other workers in Canada and do not compensate for the increased cost of living generally.

This is the third revision of the Report on Salaries and Qualifications of Public Health Personnel. The original report was published by the Association in 1947, the first revision in 1949, and the second revision in 1952.

In nearly all groups the initial minimum salary is inadequate and it has become increasingly apparent that the small salary range of most positions is a major deterrent to professional people who contemplate public service. The small salary range, with increments usually confined to a period of a few years, not only affects recruitment but makes it very difficult to retain competent workers. Public Health cannot compete successfully with other professional fields in Canada or the United States. For people already engaged in the practice of public health, there is little or no monetary incentive to advancement, and this is one of the main reasons why so many well-trained workers have left public health during the past few years.

The standards of service, the initial training requirements, the postgraduate requirements and the in-service training standards have been raised and maintained at a higher level during the past decade. These steps were taken by the public health workers themselves in an effort to improve the quality of both the service and the type of person giving the service to the public.

It is extremely difficult to maintain this attitude of improvement and advancement in the face of the attitude that the public health worker is apparently worth no more to the agency after twenty years of service than he is after three or five years' service."

While there are outstanding examples of improvement in salary range in a few of the agencies, the overall Canadian picture cannot be considered in any way competitive with other similar fields of endeavour, nor attractive to a student contemplating professional public service.

During 1956 information regarding any salary or qualification changes that had been instituted since 1951 was gathered from 10 provincial health departments, 183 health units, 21 city health departments, and the Department of National Health and Welfare. This material is presented in the body of the revised report and in the appended tables. The major portion of the data collected appears in the Tables of the Appendix.

GENERAL RECOMMENDATIONS

The data regarding factors other than basic salary which affect the earned income of the salaried individual are, to all intents, similar to those of the original report.

Recommendations regarding these factors are as follows:

1. That all professional or technical personnel employed by official health agencies be employed on the understanding that they will receive, upon the recommendation of their employer, an annual increment up to a maximum salary, with competence in the performance of duties as the obviously sound basis for such recommendations. Maximum salaries must be comparable with those obtainable in professional or technical jobs of similar responsibility in private enterprise in the same region.

2. That all such employees of official health agencies should be provided with the opportunity to participate in a superannuation or pension scheme, financed by contributions from employee and employer, or some equivalent method. It is desirable that these pension plans be made reciprocal and it is recommended that health agencies investigate the feasibility of reciprocal arrangements. It is recommended that after a minimum of twenty years' service provision be made to hold superannuation in abeyance for a person

changing employment until the retirement age adopted by the particular scheme, after which payment would begin on the basis of contributions made.

3. That automobiles be provided or car allowances be granted personnel whose duties require them to travel. Such allowances should not be regarded as forming part of the salary. The ownership of a car should not be a condition for employment. Where it is desirable for personnel to own their own cars and the agency does not provide a car, arrangements for financing the car should be made by the agency; this is most important for recruitment purposes.

4. That professional or technical employees receive, upon the completion of one year's employment, three full weeks' holidays with pay per annum; and in the case of personnel whose duties require them to be on call evenings and holidays, that this period be extended to four full weeks with pay, or that "in lieu time" pay be arranged to compensate for this extra work.

5. That employees receive cumulative sick leave equivalent to $1\frac{1}{2}$ days per month and that pay and allowances equivalent to a percentage of unused cumulative sick leave be given as a bonus to employees upon leaving or superannuation.

6. That provision be made in the budget of the health agency for professional training of personnel at postgraduate or refresher courses and attendance at scientific meetings.

7. That when qualified, experienced personnel are newly employed, their starting salary should be at the level that their previous experience would indicate.

RECOMMENDATIONS BY OCCUPATION

Each profession and technical occupation has been divided into salary groups with responsibility, experience, and training as the factors which govern the variation between groups. Personality qualifications have not been included in the recommendations, as their value can only be judged by the employing agency.

Authorities may find that the recommended groups in a specific profession do not suit their needs, in which case the groups can be adapted to fit these needs. In order to classify those positions that are not specified, the authorities concerned should match the qualification requirements and responsibility of the position in question with those of one of the recommended groups in this report. In this way they will be able to classify the position under discussion.

It is realized that there are many persons now engaged in the practice of public health who have not received the formal educational training recommended. It is to be understood, in interpreting the recommended qualifications, that practical field experience obtained under competent supervision can be considered in special cases as an alternative to formal education and that these recommended qualification requirements may be adjusted to include those persons already employed who are without formal training but giving creditable service in public health. *However, the recommended qualifications should be adhered to when new appointments are being made.*

It should be noted that the term "basic minimum salary" in this report means the minimum salary as laid down for a specific position exclusive of such items as cost-of-living bonus, car or room and board allowances, etc.

In the 1948 and 1951 reports it was strongly recommended that the maximum salary of one group should not be limited to the level of the minimum of the next higher group. From a review of the salaries paid in 1956 it would appear that maximum salaries are usually set lower than the starting salary of the next higher group. This is one of the major factors in the production of narrow salary ranges, and while it can be argued that a person can improve his salary by moving to the next higher grade, this administrative practice does nothing to appease the competent long-service employee who for a variety of reasons is unable to attain the next step on the ladder. As previously recommended, employees should be compensated by increments in keeping with the quality of their service.

PHYSICIANS IN PUBLIC HEALTH AGENCIES

While it is a fact that there are fewer physicians shown as being employed full time in public health agencies in 1956 than in 1951, this may be partially attributable to the number of agencies not replying to the questionnaire, the expected increase in coverage of the population by full-time health agencies employing qualified physicians has not materialized. There appears to be little doubt that one of the major factors is the relatively unattractive salaries offered to physicians by health agencies. Since 1951 there has been an upward trend in most of the categories previously studied for all groups. In 1951, 55 per cent of the positions offered \$5,500 or less as a starting salary. In 1956, 30 per cent of all positions offer less than \$6,000, and 40 per cent offer less than \$6,500. Thirty per cent are limited to a maximum of \$7,000 and only 25 per cent can expect to ever earn more than between \$9,000 and \$9,500. These figures apply generally to physicians with post-graduate training.

Too many of the agencies offer very limited salary ranges to physicians entering public health, and as pointed out in the general recommendations, this still appears to be one of the serious administrative faults of public health agencies today.

Recommendations

SALARIES THAT ARE SUGGESTED FOR THE VARIOUS GROUPS ARE CONSIDERED TO BE THE MINIMUM SALARY THAT SHOULD BE USED FOR THAT PARTICULAR POSITION OR GRADE ANYWHERE IN CANADA. Areas or provinces that have a generally higher economic status should make an upward adjustment of these suggested minima. These recommendations are proposed as a basis or guide to authorities in the preparation of salary classification and schedules. *The recommendations do not include cost-of-living bonus, car allowance, etc.*

GROUP IA

Duties: This group includes physicians engaged in public health as assistant clinicians in treatment or public health clinics; junior school physicians; junior assistants in a health department at a provincial or city level; and other positions that do not require specialty training.

Qualifications: Graduation in medicine from an approved university or registration by a provincial licensing authority, and a minimum of one year's rotating internship in a general hospital.

Basic MINIMUM Salary \$5,500 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP IB

Duties: As outlined for Group IA.

Qualifications: In addition to the qualifications required for Group IA, at least one year in general practice.

Basic MINIMUM Salary \$6,500 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

It is from the above groups that personnel can be selected for postgraduate training in public health or one of the allied specialties.

GROUP II

Duties: This group includes physicians in such positions as medical officer of health of small cities or assistant health officer in health units; assistant to the director of a division at a city or provincial level; district health officer in a large city; junior specialist in special services such as mental hygiene, maternal and child hygiene, tuberculosis, laboratories, etc.

Qualifications: In addition to the qualifications required for Group I, a degree or diploma in public health from an approved university or, in the case of the allied specialties, postgraduate training of at least one year, recognized by the Royal College of Physicians and Surgeons of Canada as leading to certification in the specialty indicated; or equivalent supervised in-service training in a public health agency or in the specialty indicated.

Basic MINIMUM Salary \$8,000 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP III

Duties: This group includes such positions as medical officer of health of a health unit or medium-sized city; director of a division in larger cities or similar divisions in provincial departments; chief specialist of services, such as tuberculosis, mental hygiene, etc., at the larger city level; regional consultant specialist for several health units or assistant chief of such services in a provincial service.

Qualifications: In addition to the qualifications required for Group II, at least three years' training and experience in a public health department or in the specialty indicated. If such an incumbent holds the Specialist's Certificate in Public Health from the Royal College of Physicians and Surgeons of Canada or the American Board of Preventive Medicine and Public Health, he should receive an additional sum of \$500. (Minimum Salary, \$10,500.)

Basic MINIMUM Salary \$10,000 plus an annual increment of at least \$500 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP IV

Duties: This group includes such positions as medical officer of health of large cities; assistant medical officer of health of metropolitan cities; regional medical officer of health supervising several health units; assistant deputy minister; director of a senior division or chief specialist in the senior or larger specialty groups at provincial level.

Qualifications: In addition to the qualifications required for Group II, certification as a specialist by the Royal College of Physicians and Surgeons of Canada or the American Board of Preventive Medicine and Public Health.

Basic MINIMUM Salary \$12,000 plus an annual increment of at least \$500 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

CHART A
CUMULATIVE DISTRIBUTION OF MINIMUM SALARIES
FULL-TIME PHYSICIANS
1956 vs 1951

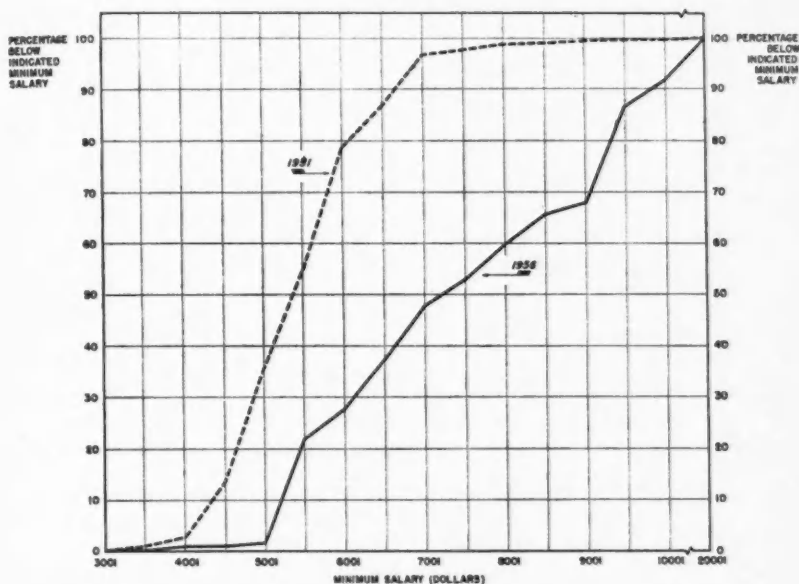


TABLE 1—PERCENTAGE DISTRIBUTION OF MINIMUM AND MAXIMUM SALARIES
FULL-TIME PHYSICIANS—1956 vs. 1951

Amount	Minimum		Maximum	
	1956	1951	1956	1951
\$3001-3500	...	1.0	...	0.6
3501-4000	0.9	1.7	...	0.8
4001-4500	...	10.6	...	0.3
4501-5000	0.7	22.3	1.0	20.8
5001-5500	20.3	18.9	0.3	8.7
5501-6000	5.8	24.2	0.9	20.9
6001-6500	9.5	8.2	5.6	22.5
6501-7000	10.5	9.6	22.3	14.8
7001-7500	5.0	1.1	7.9	6.0
7501-8000	7.0	1.0	3.6	1.8
8001-8500	5.9	0.3	6.5	1.0
8501-9000	2.3	0.3	6.1	0.6
9001-9500	18.6	0.3	21.6	0.4
9501-10,000	5.2	0.1	5.3	0.1
10,001-12,000	7.0	0.4	14.5	0.7
12,001-15,000	1.2	...	3.7	...
15,001-18,000	0.1	...	0.7	...
Total	100.0	100.0	100.0	100.0

GROUP V

Duties: This group includes such positions as provincial deputy minister of health or chief medical officer, and medical officer of health of metropolitan cities.

Qualifications: In addition to the qualifications required for Group IV, a total of ten years' service in public health and proven administrative ability.

Basic MINIMUM Salary \$15,000 plus an annual increment of at least \$500 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

PUBLIC HEALTH NURSING PERSONNEL

The number of nurses reported by agencies has increased by 969 since the 1951 report. While this seems to indicate a better picture, one must remember that there has been an increase in the total population of Canada from the year 1951 of 2,071,362. The distribution of these positions is shown in Appendix B, Tables I and II. Of this total—2678—approximately 40 per cent are without public health qualifications, this is an increase of 15 per cent over the 1951 figures. This probably indicates that agencies have been unable to obtain nurses with public health qualifications for the positions available. This must be considered a dangerous lowering of standards even though it might be argued that it is better to fill the positions than leave them vacant due to the lack of qualified personnel. There has been an upward trend in nursing personnel salaries since 1951. Over 60 per cent of the staff nurses with public health qualifications now start at salaries ranging from \$3,000 to \$3,400. A few start at a better salary range but the bulk of the remainder start at less than \$3,000. Ninety-seven per cent of the nurses are limited to \$4,000 or less. The nursing positions not requiring public health qualifications present a much wider range of salaries and this would reflect the type of responsibility assigned to the particular job.

The majority of supervisory positions in the public health nursing field are in the salary range of \$3,500 to \$5,000. With the increased training requirements and the trend in most health agencies to increased responsibility of the public health nurse, coupled with the increasing competition from nursing jobs outside of public health, the public health nursing field seems to be little more than holding its own. Senior staff nurses and supervisory personnel who are expected to remain in this career must be offered a more attractive future financially or they will be lost to other fields of endeavour. As with most other public health categories, the small range between maximum and minimum still tends to destroy incentive for remaining in this field.

Recommendations

SALARIES THAT ARE SUGGESTED FOR THE VARIOUS GROUPS ARE CONSIDERED TO BE THE MINIMUM SALARY THAT SHOULD BE USED FOR THAT PARTICULAR POSITION OR GRADE ANYWHERE IN CANADA. Areas or provinces that have a generally higher economic status should make an upward adjustment of these suggested minima. These recommendations are proposed as a basis or guide to authorities in the preparation of salary classification and schedules. *The recommendations do not include cost-of-living bonus, car allowance, etc.*

GROUP I

Duties: This group includes such positions as registered nurses employed in treatment clinics of official health agencies and nurses employed in health agencies as staff nurses who have no special qualifications in public health.

Qualifications: A diploma in nursing from an approved school of nursing plus provincial registration. Nurses who show an aptitude for public health work can be selected from this group for postgraduate training in order to qualify them for advancement to other groups.

Basic MINIMUM Salary \$2,800 plus an annual increment of at least \$200 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

TABLE II—STAFF NURSES WITH PUBLIC HEALTH QUALIFICATIONS—RELATION OF MINIMUM AND MAXIMUM SALARY

Minimum Amount	Maximum Amount														Total
	2301-2400	2401-2500	2501-2600	2601-2700	2701-2800	2801-2900	2901-3000	3001-3100	3101-3200	3201-3300	3301-3400	3401-3500	3501-4000	4001-5000	
\$2001-2100	6	...	...	...	...	11	...	...	...	...	...	...	...	...	17
2101-2200	2	...	...	...	...	...	...	...	...	2
2201-2300
2301-2400
2401-2500
2501-2600
2601-2700	13	...	13	...	...	...	...	...	...	13
2701-2800	1	...	1	5	32	...	...	9	...	122
2801-2900	11	...	8	30	35	56	12	18	...	152
2901-3000	17	6	...	4	16	62	7	11	...	142
3001-3100	12	1	5	...	...	...	18
3101-3200	27	10	...	5	210
3201-3300	5	...	...	...	320
3301-3400	315
3401-3500	181
3501-4000	172
4001-5000	2	1	14	182
	1	2	4
	1	15
	2	2
Total	6	...	...	...	12	43	68	22	51	84	155	31	863	45	1380

CHART B
CUMULATIVE DISTRIBUTION OF MINIMUM SALARIES
STAFF NURSES WITH PUBLIC HEALTH QUALIFICATIONS
1956 vs 1951

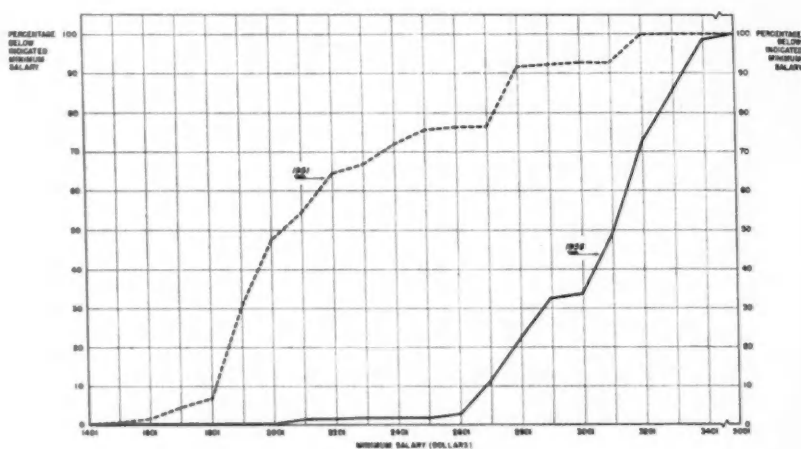


TABLE III—PERCENTAGE DISTRIBUTION OF MINIMUM AND MAXIMUM SALARIES
STAFF NURSES WITH PUBLIC HEALTH QUALIFICATIONS—1951 vs. 1956

Amount	Minimum		Maximum	
	1956	1951	1956	1951
\$1401-1500	...	0.3	...	...
1501-1600	...	1.1	...	...
1601-1700	...	2.8	...	...
1701-1800	...	2.4	...	0.3
1801-1900	...	23.9	...	2.7
1901-2000	...	17.0	...	0.9
2001-2100	1.2	6.9	...	4.8
2101-2200	...	9.9	...	11.1
2201-2300	0.2	2.5	...	3.5
2301-2400	...	5.1	0.4	16.7
2401-2500	...	3.6	...	15.9
2501-2600	0.9	0.8	...	3.0
2601-2700	8.8	...	...	7.9
2701-2800	11.0	15.3	0.9	3.7
2801-2900	10.3	0.4	3.1	2.9
2901-3000	1.3	0.6	4.9	3.0
3001-3100	15.2	...	1.6	...
3101-3200	23.2	7.4	3.7	15.2
3201-3300	13.1	...	6.1	...
3301-3400	13.2	...	11.2	...
3401-3500	0.3	...	2.2	1.0
3501-4000	1.1	...	62.6	...
4001-5000	0.2	...	3.3	7.4
Total	100.0	100.0	100.0	100.0
Numbers	1380	1082	1380	1082

GROUP IIA

Duties: This group includes recently qualified staff nurses employed in general public health or one of the specialized branches of public health.

Qualifications: A degree in nursing including public health from an approved university school of nursing; or a diploma in nursing from a recognized school of nursing plus at least one year's postgraduate training in public health nursing; or supervised postgraduate training in the specialty indicated. Nurses from Group I who have received supervised in-service training in public health or one of its allied specialties equivalent to the postgraduate training mentioned, may be included in this group.

Basic MINIMUM Salary \$3,500 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP IIB

Duties: This group includes senior staff nurses responsible for some supervision of a group of public health staff nurses.

Qualifications: In addition to the qualifications required for Group II, at least three years' experience in public health nursing.

Basic MINIMUM Salary \$4,000 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP III

Duties: This group includes supervisors and consultants.

Qualifications: In addition to the qualifications required for Group II, a course in administration and supervision in public health nursing at an approved university and at least three years' experience in public health nursing.

Basic MINIMUM Salary \$4,500 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP IV

Duties: This group includes directors of public health nursing in health units or cities with a nursing staff of 25 or over; directors of public health nursing in smaller provinces, assistant directors of public health nursing in large cities or provinces; educational supervisors at provincial level.

Qualifications: In addition to the qualifications required for Group III, a minimum of six years of experience in public health nursing, three of which should have been as a supervisor of nurses or an equivalent responsibility, and should include an adequate period of administration. It is desirable that this group should be drawn in the main from the nurses who have obtained a university degree in nursing.

Basic MINIMUM Salary \$5,500 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP V

Duties: This group includes directors of public health nursing at provincial or large city level.

Qualifications: In addition to the qualifications required for Group IV, a minimum of ten years' experience in public health nursing, of which at least two years should have been in an administrative capacity and three years in supervision or equivalent responsibility.

Basic MINIMUM Salary \$6,500 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

ENGINEERS IN PUBLIC HEALTH AGENCIES

There are 75 engineering positions reported in 1956, an increase of 25 positions over 1951. This is the largest increase since this report was first published. The distribution of these positions is shown in Appendix C, Table I.

Of the 57 assistant engineers, approximately 50 start at \$5,000 to \$6,000 and can only expect to reach a maximum of \$7,000. This is a better picture than 1951, but as this is one of the most highly competitive fields in industry at the moment it will become increasingly difficult to recruit adequately trained personnel unless the starting salaries and the salary ranges are increased.

The chief engineers' positions show a little better trend, but generally the same statement applies. The picture cannot be considered to be competitive with industry generally. Some engineers of high calibre motivated to public service may be obtained initially at the salaries presented, but few of them can be expected to remain with the limited salary range offered when they are subjected to the more attractive opportunities open for such professional ability.

Recommendations

SALARIES THAT ARE SUGGESTED FOR THE VARIOUS GROUPS ARE CONSIDERED TO BE THE MINIMUM SALARY THAT SHOULD BE USED FOR THAT PARTICULAR POSITION OR GRADE ANYWHERE IN CANADA. Areas or provinces that have a generally higher economic status should make an upward adjustment of these suggested minima. These recommendations are proposed as a basis or guide to authorities in the preparation of salary classification and schedules. *The recommendations do not include cost-of-living bonus, car allowance, etc.*

GROUP I

Duties: This group includes engineering positions that require a graduate engineer with no specialized experience or postgraduate training to perform routine engineering duties under the supervision of a qualified public health engineer.

Qualifications: Graduation in engineering from an approved university.

Basic MINIMUM Salary \$5,000 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP II

Duties: This group includes such positions as assistant public health engineers employed in public health engineering under supervision at provincial or large city level.

Qualifications: In addition to the qualifications for Group I, one year of post-graduate training in public health or sanitary engineering at an approved university. In exceptional cases, Group I engineers who have had at least four years' supervised experience in public health or sanitary engineering may be included in this group.

Basic MINIMUM Salary \$6,000 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP III

Duties: This group includes such positions as public health engineer of medium-

sized cities, regional consultant for several health units, or assistant director of public health engineering at provincial level.

Qualifications: In addition to the qualifications of Group II, five years' experience in public health engineering in a public health agency.

Basic MINIMUM Salary \$7,500 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP IV

Duties: This group includes such positions as director or senior specialist of public health engineering at provincial or large city level.

Qualifications: At least one year and preferably two years of postgraduate training in public health engineering and in addition, eight years' experience in the field of public health engineering; in the administrative positions, two years of administrative experience.

Basic MINIMUM Salary \$9,000 plus an annual increment of at least \$500 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

DENTISTS IN PUBLIC HEALTH AGENCIES

The need for full-time dentists in public health agencies is as acute as ever.

Although there has been some upward trend in public health dentists' salaries, and while this might appear encouraging in relation to the 1951 figures, the increase has not kept pace with that in private practice across Canada. Here again, the limited range of salaries offers little incentive for trained people to remain in public service.

The Gordon Royal Commission on Economic Prospects in Canada, drew particular attention to the inadequate salaries for University teachers; this might also be said to apply to the Public Health Service.

Recommendations

SALARIES THAT ARE SUGGESTED FOR THE VARIOUS GROUPS ARE CONSIDERED TO BE THE MINIMUM SALARY THAT SHOULD BE USED FOR THAT PARTICULAR POSITION OR GRADE ANYWHERE IN CANADA. Areas or provinces that have a generally higher economic status should make an upward adjustment of these suggested minima. These recommendations are proposed as a basis or guide to authorities in the preparation of salary classification and schedules. *The recommendations do not include cost-of-living bonus, car allowance, etc.*

GROUP I

Duties: This group includes such positions as staff dentist carrying out a dental treatment service in a public health agency.

Qualifications: Graduation in dentistry from an approved university.

Basic MINIMUM Salary \$6,000 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP II

Duties: This group includes such positions as director of dental public health in departments of health in small cities or in health units.

Qualifications: In addition to the qualifications of Group I, a diploma or degree in dental public health from an approved university. If such an incumbent is

certified as a specialist in public health by an appropriate Provincial body, he should receive an additional sum of \$500.

Basic MINIMUM Salary \$8,000 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP III

Duties: This group includes such positions as assistant director or senior specialist on the provincial or federal level, or regional director or consultant to a group of health units, or director of a division in a larger city.

Qualifications: In addition to the qualifications for Group II, at least three years' administrative experience in dental health services. If such an incumbent is certified as a specialist in public health by an appropriate Provincial body, he should receive an additional sum of \$500.

Basic MINIMUM Salary \$9,000 plus an annual increment of \$500 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP IV

Duties: This group includes such positions as director of dental services of a division on the federal or provincial level.

Qualifications: In addition to the qualifications of Group III, a total of at least five years' experience in dental health services, and proven professional ability. If such an incumbent is certified as a specialist in public health by an appropriate Provincial body, he should receive an additional sum of \$500.

Basic MINIMUM Salary \$10,500 with an annual increment of \$500 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

PUBLIC HEALTH LABORATORY PERSONNEL

The professional staff in public health laboratories has increased in numbers from 216 to 236 and there has been a corresponding increase in technicians' positions from 365 to 599, giving a total in 1956 of 935. The distribution of these positions is shown in Appendix E, Tables I and II.

The professional staff consisting generally of university trained personnel, have had a general increase in their salary ranges, but this increase in most cases did not keep pace with the general upward trend of salaries throughout the community.

The technical staff have made a relatively good increase in the salary picture since 1951 as compared with other groups. The wide range of salaries reported again reflects the wide range of responsibility related to the technical jobs and the size of the laboratories.

In 1951 it was believed that the following factors are of paramount importance in arriving at a scale of salaries that will secure and retain satisfactory personnel:

1. The excessive turnover in the technical groups, with its wastage of effort and money, can be reduced only by increasing the salaries to such an extent that men will be attracted to this field of work.

2. The greatest need at present in laboratories is more men as candidates for the positions in the higher professional groups. In order to induce university graduates to accept a career in the laboratory, salaries offered must be commensurate with comparable professional employment.

The situation in the laboratories across Canada in regard to recruiting and maintenance of staff has been very serious for several years. The work in laboratories has become more highly specialized and the increasing demand for more extensive laboratory procedures calls for more highly trained personnel and their assumption

of more responsibility. This type of person is not available and cannot readily be recruited at the present salary levels offered in Canada.

Recommendations

SALARIES THAT ARE SUGGESTED FOR THE VARIOUS GROUPS ARE CONSIDERED TO BE THE MINIMUM SALARY THAT SHOULD BE USED FOR THAT PARTICULAR POSITION OR GRADE ANYWHERE IN CANADA. Areas or provinces that have a generally higher economic status should make an upward adjustment of these suggested minima. These recommendations are proposed as a basis or guide to authorities in the preparation of salary classification and schedules. *The recommendations do not include cost-of-living bonus, car allowance, etc.*

Technical Staff

GROUP I

Duties: This group includes laboratory technicians with no special qualifications or experience engaged in technical work under the supervision of qualified personnel.

Qualifications: An educational background equivalent to high school graduation and, in addition, one year's experience in a public health or equivalent laboratory.

Basic MINIMUM Salary \$2,000 plus an annual increment of at least \$100 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP II

Duties: This group includes laboratory technicians engaged in technical work in a public health laboratory whose duties require the assumption of some responsibility in the preparation of media or specimens, the examination of specimens, or similar laboratory procedures.

Qualifications: In addition to the requirements of Group I, graduation from an approved training course, e.g. R.T. of Canada, Society of Laboratory Technologists or three years' experience in public health or equivalent laboratory.

Basic MINIMUM Salary \$3,000 plus an annual increment of at least \$150 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP IIIA

Duties: This group includes such positions as junior laboratory assistants and requires the assumption of part of the responsibility for the operation of a section of the laboratory.

Qualifications: Preferably a specialist certificate from the Canadian Society of Laboratory Technologists or its equivalent and, in addition, five years' supervised training in a public health or equivalent laboratory.

Basic MINIMUM Salary \$4,000 plus an annual increment of at least \$200 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP IIIB

This group of senior laboratory assistants will have the same basic qualifications as Group IIIA, but because of exceptional merit they will be in a position of senior responsibility.

Basic MINIMUM Salary \$5,000 plus an annual increment of at least \$250.

Professional Staff

GROUP I

Duties: This group includes such positions as junior assistant bacteriologist, chemist, or serologist in a public health laboratory.

Qualifications: Graduation from an approved university, preferably having majored in bacteriology or chemistry.

Basic MINIMUM Salary \$4,250 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP II

Duties: This group includes such positions as senior assistant bacteriologist, chemist or serologist in a public health laboratory.

Qualifications: In addition to the requirements of Group I, a year's postgraduate training in their specialty at an approved university or equivalent supervised training in a public health laboratory plus a period of two years' service in a public health laboratory.

Basic MINIMUM Salary \$5,000 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP III

Duties: This group includes such positions as associate bacteriologist, chemist or serologist in a public health laboratory.

Qualifications: A master's degree and at least three years' varied experience in a large public health laboratory.

Basic MINIMUM Salary \$6,000 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP IV

Duties: This group includes such positions as principal bacteriologist, chemist or serologist in a public health laboratory.

Qualifications: A doctorate in bacteriology or chemistry and, in addition, five years' experience in public health laboratory procedures and the administrative or research experience required for the position.

Basic MINIMUM Salary \$7,000 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP V

Duties: This group includes such positions as assistant director of a public health laboratory.

Qualifications: A doctor's degree in bacteriology or chemistry and, in addition, five years' experience in public health laboratory procedures, of which two years should have been in an administrative capacity.

Basic MINIMUM Salary \$8,000 plus an annual increment of at least \$500 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP VI

This group includes directors of public health laboratories, and as such positions are held by personnel of widely varying background the recommended salary and

necessary qualifications are not included in this report. Each agency may define its own specifications for this position by comparing the qualifications and training of the incumbent with positions of equal responsibility in other branches of public health.

GRADUATES IN VETERINARY MEDICINE

There are 585 positions reported for this group in 1956 which is a marked improvement in numbers over 1951. The distribution of the salaries is shown in Appendix F, Table I.

All veterinarians in 1951 started below \$5,000 a year and only 20 could expect to go above \$5,000. In 1956 the picture has improved and most of the veterinarians started at a salary above \$5,000, but their salary ranges, in the main, are limited to a maximum of \$6,500.

While this trend is encouraging, the salary levels must not be accepted as adequate because the private practice of veterinary medicine is still much more attractive from a monetary standpoint. If public health, in addition, is to require postgraduate training, then salary levels must be brought closer to those obtainable in private practice in order to compete successfully for the available graduates.

Recommendations

SALARIES THAT ARE SUGGESTED FOR THE VARIOUS GROUPS ARE CONSIDERED TO BE THE MINIMUM SALARY THAT SHOULD BE USED FOR THAT PARTICULAR POSITION OR GRADE ANYWHERE IN CANADA. Areas or provinces that have a generally higher economic status should make an upward adjustment of these suggested minima. These recommendations are proposed as a basis or guide to authorities in the preparation of salary classification and schedules. *The recommendations do not include cost-of-living bonus, car allowance, etc.*

GROUP IA

Duties: This group includes such positions as veterinary inspectors, and other positions requiring graduates in veterinary medicine to work under supervision.

Qualifications: Graduation from an approved university school of veterinary medicine.

Basic MINIMUM Salary \$5,000 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP IB

Duties: This group includes such positions as senior veterinary inspectors and other positions requiring graduates in veterinary medicine to work under supervision.

Qualifications: Graduation from an approved university school of veterinary medicine. In addition to the qualifications required for Group IA, at least two years' experience in veterinary medicine.

Basic MINIMUM Salary \$5,500 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP II

Duties: This group includes such positions as assistant chief of a division of food control of large health departments or chief inspector of health units or other positions where the duties require a qualified veterinarian to assume some of the responsibility of the operation of a food control division in a health agency.

Qualifications: In addition to the requirements of Group I, a diploma or degree in veterinary public health from an approved university and one year's supervised experience in a health agency; or in lieu of these qualifications, four years' supervised experience in a health agency.

Basic MINIMUM Salary \$6,000 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP III

Duties: This group includes such positions as chief inspector of a division of food control in a large health department or other positions requiring qualified veterinarians, e.g. regional supervisory veterinarians.

Qualifications: In addition to the qualifications of Group II, five years' experience in veterinary medicine in public health. In exceptional cases, personnel who have had ten years' experience in veterinary public health may be included in this group.

Basic MINIMUM Salary \$7,000 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

GROUP IV

Duties: This group includes such positions as director of a division of food control of metropolitan cities or consultant veterinarian at larger provincial level.

Qualifications: In addition to the Diploma in Veterinary Public Health a further year in postgraduate study at an approved university plus six years' experience in a public health agency, two of which should have been in an administrative capacity.

Basic MINIMUM Salary \$9,000 plus an annual increment of at least \$500 to a maximum salary comparable to that obtainable in professional positions with similar responsibility in private enterprise in the same region.

PUBLIC HEALTH STATISTICAL PERSONNEL

In 1956 there are 61 positions reported as against 28 in 1951. The distribution of the salaries is shown in Appendix G, Table I. In the previous report it was pointed out, "*As the survey does not include the general clerical employees of health agencies, and as it was somewhat difficult to decide at what point in training and experience a non-professional person becomes a public health statistical clerk, the positions reported may not represent the entire group of public health statistical personnel from the agencies surveyed.*"

The wide variation in the salary range shown in 1951 still exists and for the same reasons, there is a wide range of responsibility and training requirements for the incumbents of these positions. There has been an improvement in the salary levels since the 1951 report. The need for adequately trained public health statistical personnel increases constantly, and the training facilities in Canada are still practically non-existent.

Recommendations

SALARIES THAT ARE SUGGESTED FOR THE VARIOUS GROUPS ARE CONSIDERED TO BE THE MINIMUM SALARY THAT SHOULD BE USED FOR THAT PARTICULAR POSITION OR GRADE ANYWHERE IN CANADA. Areas or provinces that have a generally higher economic status should make an upward adjustment of these suggested minima. These recommendations are proposed

as a basis or guide to authorities in the preparation of salary classification and schedules. *The recommendations do not include cost-of-living bonus, car allowance, etc.*

For the purpose of this report, public health statistical personnel have been divided into four groups, including both professional and clerical groups. Medical personnel with training in public health statistics are not included in these classifications as they are included in the recommendations regarding physicians.

GROUP I

Duties: This group includes such positions as statistical clerks whose duties require knowledge of methods of collection and tabulation of public health statistics and the ability to supervise, under senior direction, a group of clerical staff engaged in the compilation of statistical data.

Qualifications: Four years' supervised experience in statistical work in a public health or similar agency.

Basic MINIMUM Salary \$3,250 plus an annual increment of at least \$150 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP II

Duties: This group includes such positions as assistant statistician in large health departments or chief statistical clerk in smaller cities or health units. Duties should include responsibility for the collection and presentation of the public health statistical data or a section of it under the guidance of a consultant statistician.

Qualifications: Graduation from a recognized university where studies include the elements of statistical methods, and, in addition, one year's supervised experience in public health statistics in a public health agency. Exceptional personnel who by experience have acquired an educational training equivalent to the above may be included in this group. A minimum of six years' supervised experience should be required as an equivalent.

Basic MINIMUM Salary \$4,000 plus an annual increment of at least \$200 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP III

Duties: This group includes such positions as assistant director of statistical divisions in public health agencies and regional consultant statistician for a group of health units.

Qualifications: In addition to the requirements of Group II, one year's postgraduate training in public health statistics or a course of study leading to a certificate in public health at a recognized university. As in Group II, exceptionally well trained personnel who have not had formal academic training may be included in this group if they have had nine years' supervised training in public health statistics.

Basic MINIMUM Salary \$5,000 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP IV

Duties: This group includes such positions as director of public health statistical services in large health agencies. These personnel should be capable of interpreting and analyzing statistical data and directing statistical research programs.

Qualifications: Graduation from a recognized university plus two years' postgraduate study, one year of which should have been in statistical methods and theory, preferably leading to a master's degree, and the other in public health. In addition, five years' experience in a statistical division of a public health agency, of which one year should have been in an administrative capacity.

Basic MINIMUM Salary \$7,500 plus an annual increment of at least \$500 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

NUTRITIONISTS IN PUBLIC HEALTH AGENCIES

There are 49 positions reported in 1956 as against 33 in 1951. The salary distribution is shown in Appendix H, Table I.

The greatest number of the starting salaries offered are in the range of \$3,500 to \$4,000 or less and most of the nutritionists are limited to approximately \$5,000 or less. This reflects an upward trend to some comparable groups, but as stated previously, the opportunities offered to university graduates with postgraduate training are still limited and relatively unattractive in comparison with industry or similar fields.

Recommendations

SALARIES THAT ARE SUGGESTED FOR THE VARIOUS GROUPS ARE CONSIDERED TO BE THE MINIMUM SALARY THAT SHOULD BE USED FOR THAT PARTICULAR POSITION OR GRADE ANYWHERE IN CANADA. Areas or provinces that have a generally higher economic status should make an upward adjustment of these suggested minima. These recommendations are proposed as a basis or guide to authorities in the preparation of salary classification and schedules. *The recommendations do not include cost-of-living bonus, car allowance, etc.*

For the purpose of this report, nutritionists have been divided into two groups. Medical personnel with training in nutrition are not included in those classifications as they have been included amongst the recommendations for public health physicians.

GROUP I

Duties: This group includes such positions as assistant nutritionists in provincial or city health departments or other positions requiring a qualified nutritionist to be employed under supervision.

Qualifications: Graduation from a recognized university in a course majoring in home economics, food chemistry, nutrition or related subjects and, in addition, a minimum of one year's postgraduate study in the field of public health. Previous experience in the general field of nutrition is desirable.

Basic MINIMUM Salary \$4,500 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP II

Duties: This group includes such positions as assistant to the director of a division of nutrition at a provincial or large city level, regional consultant nutritionist for several health units, or other senior nutritionist position.

Qualifications: In addition to the qualifications of Group I, three years' experience in public health nutrition.

Basic MINIMUM Salary \$5,500 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

SANITARY INSPECTORS

There were 665 positions reported in 1956 as against 547 in 1951. The distribution of these salaries is shown in Appendix I, Table I.

As reflected in other groups there has been a similar increase in the salary ranges of sanitary inspectors but there is still a wider range of starting salaries offered than in most of the other groups in public health. The majority of non-supervisory sanitary inspectors may expect a maximum salary of between \$3,500 and \$4,500. The majority of the chief sanitary inspectors can expect to reach a salary between \$4,000 and \$5,500. This does not seem to offer inducement for personnel to either increase their training or to accept more responsibility. In other words, the inducements to stay in sanitary inspection work as a career are limited.

Recommendations

SALARIES THAT ARE SUGGESTED FOR THE VARIOUS GROUPS ARE CONSIDERED TO BE THE MINIMUM SALARY THAT SHOULD BE USED FOR THAT PARTICULAR POSITION OR GRADE ANYWHERE IN CANADA. Areas or provinces that have a generally higher economic status should make an upward adjustment of these suggested minima. These recommendations are proposed as a basis or guide to authorities in the preparation of salary classification and schedules. *The recommendations do not include cost-of-living bonus, car allowance, etc.*

GROUP I

Duties: This group includes positions that require a qualified sanitary inspector to carry out inspectional duties under the supervision of a senior member of the public health agency.

Qualifications: The Certificate in Sanitary Inspection (Canada).

Basic MINIMUM Salary \$3,200 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP II

Duties: This group includes such positions as senior inspector in smaller health agencies.

Qualifications: (a) The Certificate in Sanitary Inspection (Canada), plus five years' experience in environmental sanitation in a public health agency; or

(b) One year's postgraduate training in public health plus one year's experience in environmental sanitation in a public health agency. A senior sanitary inspector having a Certificate in Public Health should receive \$4,500 as a minimum salary.

Basic MINIMUM Salary \$4,250 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP III

Duties: This group includes senior inspectors of large health agencies and regional or provincial supervisors of several health units.

Qualifications: (a) The Certificate in Sanitary Inspection (Canada), plus ten years' experience in environmental sanitation in a public health agency, at least two of which should have been in a supervisory or administrative capacity; or

(b) One year's postgraduate training in public health, plus five years' experience in environmental sanitation in a public health agency, at least two of which should have been in a supervisory or administrative capacity. An inspector of this group having a Certificate in Public Health should receive \$5,750 as a minimum salary.

Basic MINIMUM Salary \$5,500 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

HEALTH EDUCATION PERSONNEL

There is a wide variation in the salary range as well as a wide range of responsibility and training required for the incumbents of these positions.

There appears to be a shortage of personnel in this field. The trend seems to indicate that these people are being trained in the United States rather than in Canada at the present time.

Recommendations

SALARIES THAT ARE SUGGESTED FOR THE VARIOUS GROUPS ARE CONSIDERED TO BE THE MINIMUM SALARY THAT SHOULD BE USED FOR THAT PARTICULAR POSITION OR GRADE ANYWHERE IN CANADA. Areas or provinces that have a generally higher economic status should make an upward adjustment of these suggested minima. These recommendations are proposed as a basis or guide to authorities in the preparation of salary classification and schedules. *The recommendations do not include cost-of-living bonus, car allowance, etc.*

GROUP I

Duties: This group includes positions under supervision in a city department of health or a provincial division of health education designed to acquaint these people with the field and to determine whether they should, after three years' experience proceed to postgraduate training in health education.

Qualifications: Graduation from an approved university in arts, science, nursing, education or social science with credit in the prerequisite subjects for admission to a course in health education in a school of hygiene. An additional year of postgraduate training in public health, in education, in public health nursing, or in social science is to be desired. Those who show an aptitude for health education can be selected from this group for postgraduate training in order to qualify them for advancement to other groups.

Basic MINIMUM Salary \$3,500 plus an annual increment of at least \$150 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP II

Duties: This group includes such positions as health educator in a health department or health unit.

Qualifications: Graduation from an approved university in arts, science, nursing, education or social science, preferably with an additional year of postgraduate training in public health, education, public health nursing or social science and one year's postgraduate training in health education at an approved university leading to an M.P.H. Degree or a Certificate in Public Health with specialization in health education.

Basic MINIMUM Salary \$4,500 plus an annual increment of at least \$250 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP III

Duties: This group includes such positions as assistant to the director of health education in large city health departments or at a provincial level.

Qualifications: In addition to the requirements of Group II, at least three years' experience under supervision in health education.

Basic MINIMUM Salary \$5,500 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

GROUP IV

Duties: This group includes such positions as director of health education in a large city health department or at a provincial level.

Qualifications: In addition to the requirements of Group II, at least five years' experience in a health education division of a public health agency, of which one year should have been in an administrative capacity.

Basic MINIMUM Salary \$6,500 plus an annual increment of at least \$300 to a maximum salary comparable to that obtainable in positions with similar responsibility in private enterprise in the same region.

APPENDIX A

TABLE I—MINIMUM AND MAXIMUM SALARIES, **Public Health Physicians, By**
EMPLOYMENT

Amount	Federal and Provincial		Health Units		Cities		Total	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
\$3501-4000	6	...	...	...	...	...	6	...
4001-4500	...	...	...	...	...	...	...	...
4501-5000	4	6	1	1	...	...	5	7
5001-5500	4	2	104	...	29	...	137	2
5501-6000	8	...	10	2	21	4	39	6
6001-6500	40	1	6	5	18	32	64	38
6501-7000	51	29	15	104	5	18	71	151
7001-7500	6	31	20	9	8	13	34	53
7501-8000	11	14	21	6	15	4	47	24
8001-8500	14	16	17	22	9	6	40	44
8501-9000	11	10	3	19	2	12	16	41
9001-9500	99	109	25	26	2	11	126	146
9501-10,000	30	28	3	3	2	5	35	36
10,001-12,000	42	63	1	29	4	6	47	98
12,001-15,000	6	20	...	...	2	5	8	25
15,001-18,000	1	4	...	...	...	1	1	5
Total	333	333	226	226	117	117	676	676

APPENDIX A
TABLE II—MINIMUM AND MAXIMUM SALARIES, PUBLIC HEALTH PHYSICIANS, BY POSITION

Amount	Deputy Ministers or Chief Provincial Health Officers		Asst. Deputy Ministers		Directors of Divisions, Provinces and Cities		Medical Officers of Health and Asst. Medical Officers of Health, Cities		Medical Officers of Health and Asst. Medical Officers of Health, Units		Positions Requiring Special Qualifications		Positions NOT Requiring Special Qualifications		Total	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
\$3501-4000	6	...	6	...
4001-4500
4501-5000
5001-5500
5501-6000
6001-6500
6501-7000
7001-7500
7501-8000
8001-8500
8501-9000
9001-9500
9501-10,000
10,001-12,000
12,001-15,000
15,001-18,000
Total	11	11	5	5	85	85	43	43	220	220	139	139	173	173	676	676

APPENDIX B

TABLE I—MINIMUM AND MAXIMUM SALARIES, Public Health Nursing Personnel
BY TYPE OF POSITION

Amount	A		B		C		Total	
	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum
\$1601-1700	7	...	...	...	...	...	7	...
1701-1800	...	...	...	...	...	...	...	...
1801-1900	514	...	...	...	...	...	514	...
1901-2000	30	7	...	...	...	...	30	7
2001-2100	...	...	17	...	...	...	17	...
2101-2200	3	...	...	...	...	...	3	...
2201-2300	13	...	2	...	...	...	15	...
2301-2400	...	115	...	6	...	...	...	121
2401-2500	29	...	...	...	...	...	29	...
2501-2600	51	6	13	...	2	...	66	6
2601-2700	59	7	122	...	1	...	182	7
2701-2800	32	3	152	12	5	...	189	15
2801-2900	4	453	142	43	5	...	151	496
2901-3000	260	36	18	68	6	1	284	105
3001-3100	1	41	210	22	23	3	234	66
3101-3200	27	28	320	51	6	1	353	80
3201-3300	...	51	181	84	14	11	195	146
3301-3400	2	102	182	155	15	7	199	264
3401-3500	...	10	4	31	5	13	9	54
3501-4000	6	173	15	863	135	43	156	1079
4001-5000	...	6	2	45	34	158	36	209
5001-6000	...	...	...	...	9	14	9	14
6001-7000	...	...	...	...	...	9	...	9
Total	1038	1038	1380	1380	260	260	2678	2678

A—Staff nurse without public health qualifications.

B—Staff nurse requiring public health qualifications.

C—Director, Supervisor and other senior positions requiring public health qualifications.

APPENDIX B

TABLE II—MINIMUM AND MAXIMUM SALARIES, Public Health Nursing Personnel,
By Agency

Amount	Federal and Provincial		Health Units and Districts		Cities		Total	
	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum
\$1601-1700	...	...	...	...	7	...	7	...
1701-1800	...	...	...	...	...	...	...	...
1801-1900	514	...	...	...	...	...	514	...
1901-2000	30	...	...	...	...	7	30	7
2001-2100	11	...	...	...	6	...	17	...
2101-2200	3	...	...	...	...	...	3	...
2201-2300	...	...	15	...	...	...	15	...
2301-2400	...	114	...	1	...	6	...	121
2401-2500	...	...	13	...	16	...	29	...
2501-2600	18	...	26	6	22	...	66	6
2601-2700	107	...	12	...	63	7	182	7
2701-2800	25	3	106	6	58	6	189	15
2801-2900	21	452	107	32	23	12	151	496
2901-3000	140	63	27	11	117	31	284	105
3001-3100	157	18	20	38	57	10	234	66
3101-3200	156	...	71	58	126	22	353	80
3201-3300	16	64	23	46	156	36	195	146
3301-3400	29	120	6	58	164	86	199	264
3401-3500	1	6	7	37	1	11	9	54
3501-4000	59	374	13	127	84	578	156	1079
4001-5000	14	84	8	33	14	92	36	209
5001-6000	7	4	...	...	2	10	9	14
6001-7000	...	6	...	1	...	2	...	9
Total	1308	1308	454	454	916	916	2678	2678

APPENDIX C

TABLE I—MINIMUM AND MAXIMUM SALARIES, Graduate Engineers

Amount	Engineers		Assistant Engineers	
	Minimum	Maximum	Minimum	Maximum
\$3001-3500	...	...	...	...
3501-4000	...	...	...	...
4001-4500	1	...	1	...
4501-5000	5	...	4	1
5001-6000	2	7	45	25
6001-7000	4	1	7	26
7001-8000	4	5	...	5
8001-9000	1	4	...	...
9001-10,000	...	...	...	...
10,001-11,000	1	...	...	...
11,001-12,000	...	...	...	...
12,001-13,000	...	...	...	...
13,001-14,000	...	1	...	...
Total	18	18	57	57

APPENDIX D

TABLE I—MINIMUM AND MAXIMUM SALARIES, **Dentists** EMPLOYED FULL-TIME
BY PUBLIC HEALTH AGENCIES

Amount	Directors of Division or Service		Assistant Dentists	
	Minimum	Maximum	Minimum	Maximum
\$3401-3600	...	...	...	...
3601-3800	1	...	...	...
3801-4000	...	...	10	...
4001-4500	...	...	...	...
4501-5000	2	1	...	10
5001-5500	...	1	21	...
5501-6000	5	...	23	8
6001-7000	14	10	44	31
7001-8000	7	11	3	49
8001-9000	2	8	...	3
Total	31	31	101	101

APPENDIX E

TABLE I—MINIMUM AND MAXIMUM SALARIES, **Public Health Laboratory Personnel**
Professional Staff

Amount	Directors and Senior Bacteriologists, Serologists and Chemists		Assistant Bacteriologists, Serologists and Chemists	
	Minimum	Maximum	Minimum	Maximum
\$2801-3000	...	...	...	...
3001-3500	...	...	36	1
3501-4000	...	...	101	32
4001-4500	3	...	42	51
4501-5000	3	...	10	89
5001-6000	8	7	69	61
6001-7000	26	11	13	23
7001-8000	10	22	...	14
8001-9000	6	11	...	...
9001-10,000	7	4	...	...
10,001-11,000	1	5	...	...
11,001-12,000	...	3	...	...
12,001-13,000	...	...	...	...
13,001-14,000	1	2	...	...
Total	65	65	271	271

APPENDIX E

TABLE II—MINIMUM AND MAXIMUM
SALARIES,
Public Health Laboratory Personnel
Technical Staff

<i>Amount</i>	<i>Minimum</i>	<i>Maximum</i>
\$1201-1400	...	...
1401-1600	12	...
1601-1800	185	12
1801-2000	51	1
2001-2200	66	10
2201-2400	70	...
2401-2600	18	6
2601-2800	38	25
2801-3000	22	268
3001-3200	85	8
3201-3400	10	7
3401-3600	15	91
3601-3800	16	72
3801-4000	2	16
4001-4500	9	76
4501-5000	...	7
Total	599	599

APPENDIX G

TABLE I—MINIMUM AND MAXIMUM
SALARIES,
Public Health Statistical Personnel

<i>Amount</i>	<i>Minimum</i>	<i>Maximum</i>
\$2201-2400	1	...
2401-2600	...	...
2601-2800	1	...
2801-3000	...	1
3001-3500	5	2
3501-4000	6	1
4001-4500	8	5
4501-5000	7	12
5001-5500	12	5
5501-6000	10	14
6001-6500	6	6
6501-7500	3	9
7501-8500	1	5
8501-9500	1	...
9501-10,000	...	1
Total	61	61

APPENDIX F

TABLE I—MINIMUM AND MAXIMUM
—SALARIES,
Veterinarians

<i>Amount</i>	<i>Minimum</i>	<i>Maximum</i>
\$3501-4000	65	1
4001-4500	31	4
4501-5000	20	73
5001-5500	248	32
5501-6000	196	253
6001-6500	10	160
6501-7500	14	58
7501-8000	...	3
8001-8500	...	...
8501-9000	...	...
9001-9500	1	...
9501-10,000	...	1
Total	585	585

APPENDIX H

TABLE I—MINIMUM AND MAXIMUM
SALARIES,
Public Health Nutritionists

<i>Amount</i>	<i>Minimum</i>	<i>Maximum</i>
\$2201-2400	...	...
2401-2600	...	...
2601-2800	7	...
2801-3000	9	...
3001-3500	8	8
3501-4000	22	13
4001-4500	2	17
4501-5000	1	8
5001-5500	...	2
5501-6000	...	1
6001-8000	...	...
8001-10,000	...	...
10,001-11,000	1	1
Total	50	50

APPENDIX I

TABLE I—MINIMUM AND MAXIMUM SALARIES, Public Health Sanitary Inspectors

<i>Amount</i>	<i>Chief Sanitary Inspectors</i>		<i>Sanitary Inspectors</i>	
	<i>Minimum</i>	<i>Maximum</i>	<i>Minimum</i>	<i>Maximum</i>
\$1801-2000	...	...	...	...
2001-2200	...	...	50	...
2201-2400	...	...	9	...
2401-2600	...	...	16	6
2601-2800	2	2	38	1
2801-3000	3	2	44	8
3001-3500	7	1	223	90
3501-4000	46	9	177	185
4001-4500	21	20	10	237
4501-5000	10	39	7	40
5001-5500	1	14	...	7
5501-6000	1	3	...	...
6001-6500	...	1	...	...
Total	91	91	574	574

APPENDIX J

TABLE I—MINIMUM AND MAXIMUM SALARIES,
Public Health Educationists

<i>Amount</i>	<i>Minimum</i>	<i>Maximum</i>
\$2601-2800	...	...
2801-3000	2	...
3001-3500	5	1
3501-4000	3	5
4001-4500	12	5
4501-5000	2	9
5001-5500	...	3
5501-6500	...	1
Total	24	24

NEWS NOTES

Federal

Hon. A. J. Brooks, Member of Parliament for Royal, N.B., has been appointed Minister of Veterans Affairs and the acting Minister of National Health and Welfare.

In the unavoidable absence of Dr. G. D. W. Cameron, deputy minister, Department of National Health and Welfare, his paper on "The Integration of Preventive Medicine in Medical Practice" was read by Dr. G. R. F. Elliot, assistant provincial health officer for British Columbia, at the recent Canadian Medical Association meeting in Edmonton.

Dr. J. M. Johnston, principal medical officer and secretary of the advisory committee on medical research, Department of Health for Scotland, Edinburgh, was a recent visitor in Ottawa, Montreal and Toronto where he visited research units and discussed with university officers and officials of the National Research Council, the Defence Research Board and the departments of National Health and Welfare and Veterans Affairs the principles underlying the support and encouragement of medical research in Canada.

Dr. J. R. MacDougall, chief medical officer with the Food and Drug Directorate, Department of National Health and Welfare, has resigned to accept an industrial appointment.

M. Gordon Allmark, M.Sc., head of the pharmacology and toxicology section, Food and Drug Laboratories, Department of National Health and Welfare, left in June for Geneva, Switzerland, to attend a meeting of the WHO expert panel on health laboratory methods. The panel is discussing toxicological procedures for testing intentional food additives.

The Department of National Health and Welfare has been receiving weekly epidemiological reports on the influenza situation in the Far East and specimens of the causative agent officially classified by WHO as A/Singapore 1/57, have been received and distributed to various research laboratories. To evaluate the situation and its potential relationship to Canada, the Department called an advisory group of public health experts to meet during the week of July 8.

Following the International Rheumatism Congress, Professor A. I. Strukow, professor

of pathology, University of Moscow medical school, and Professor Schiskev visited Ottawa where they toured the Ottawa Civic Hospital and the University of Ottawa medical school.

Hospital construction grants recently approved under the National Health Program include: *British Columbia*—Qualicum office, Central Vancouver Island Health Unit, Qualicum, \$3,500; Queen Alexandra Solarium for Crippled Children, Victoria, \$136,910; Maple Ridge Hospital, Haney, \$81,963; Royal Jubilee Hospital, Victoria, \$1,166; *Alberta*—Provincial Training School, Red Deer, \$61,500; Macleod Municipal Hospital (nurses' residence), \$1,669; Salvation Army Grace Hospital and Nurses' Home, Calgary, \$32,500; Calgary General Hospital, \$61,500; Tofield Municipal Hospital, \$11,250; Didsbury Municipal Hospital, \$11,000; Bassano Municipal Hospital, \$25,250; Macleod Municipal Hospital, Fort Macleod, \$29,000; Holden General Hospital, \$11,500; *Saskatchewan*—Rockglen Union Hospital (nurses' residence), \$2,500; *Manitoba*—Wawanesa Medical Nursing Unit, \$4,000; Grace Hospital, Winnipeg, \$102,443; Shoal Lake District Hospital, \$15,776; *Ontario*—Ontario Hospital, North Bay, \$1,169,000; *New Brunswick*—Moncton Hospital (nurses' residence), \$80,490; Forest Hill Rehabilitation Centre, Fredericton, \$35,000.

School of Hygiene, University of Toronto

The following completed the work leading to the *Diploma in Public Health* in the 1956-57 session: Dr. Geraldine Arthur, Toronto; Dr. Allan Blumenthal, Toronto; Dr. E. K. FitzGerald, R.C.A.M.C.; Dr. Cathrena C. Hammond, Saskatchewan; Dr. G. D. M. Kettyls, British Columbia; Dr. W. B. Laing, British Columbia; Dr. Frances J. Langford, Cornwall, Ontario; Dr. C. R. Lenk, Saskatchewan; Dr. E. W. Low, Fort San, Saskatchewan; Dr. W. E. MacBean, Pickering, Ontario; Dr. A. McDermott, St. John's, Newfoundland; Dr. J. B. Newton, Indian Health Services; Dr. Velta S. Nicholson, Jamaica; Dr. Terje D. Strand, Oslo, Norway; Dr. G. E. Stoker, Indian Health Services; Dr. Richard S. Tan, Hong Kong; Dr. M. R. Warren, Fort William, Ontario.

For the *Diploma in Dental Public Health*: Dr. J. M. Conchie, British Columbia; Dr. C. H. McCormick, Manitoba.

For the **Diploma in Veterinary Public Health**: Dr. V. M. Denis, Panama; Dr. J. R. Saunders, Ontario; Dr. J. E. Sterns, New Brunswick. For the **Diploma in Industrial Hygiene**: Dr. L. V. R. Fernando, Ceylon. For the **Certificate in Public Health** (Specialization in Health Education): Miss J. V. Marshall, St. Catharines, Ontario; Miss M. Shimizu, Japan. For the **Certificate in Public Health** (Specialization in Bacteriology): Miss A. A. Strachan, Saskatchewan.

For the **Diploma in Hospital Administration**: Dr. D. H. M. Hall; Mr. P. E. Swerhone. For **First-Year Diploma in Hospital Administration**: B. L. P. Brosseau, M.D., R.C.A.M.C.; R. E. Builder, Ontario; R. I. Crickmore, U.S.A.; R. A. Hudon, U.S.A.; J. P. McCabe, M.D., R.C.A.M.C.; K. S. McLaren, Saskatchewan; J. K. Morrison, M.D., Nova Scotia; J. V. Roberts, M.D., D.V.A., Ontario; W. H. Schofield, U.S.A.; H. A. Spencer, Jamaica; J. W. Short, British Columbia, A. W. Taylor, M.D., Newfoundland.

Dr. Lachlan W. Macpherson, formerly Officer in Charge of the Virus Section, Animal Diseases Research Institute, Dominion Department of Agriculture, Hull, P.Q., has been appointed Associate Professor of Microbiology in the School of Hygiene, University of Toronto. Dr. Macpherson, a graduate of the University of Edinburgh, holds the degrees of Ph.D., M.R.C.V.S. and D.V.S.M. His experimental work includes studies on the haemagglutinating viruses, and the mucosal disease complex.

Dr. W. Harding le Riche, formerly Research Medical Officer, Physicians' Services Inc., Toronto, has been appointed Research Associate in the Department of Public Health, School of Hygiene, University of Toronto. Dr. le Riche holds the degrees of B.Sc., M.B., B.Ch., M.D., M.P.H., and he was formerly Consultant in Epidemiology, Department of National Health and Welfare, Ottawa. He is a graduate of the University of the Witwatersrand, Johannesburg, South Africa, and of the Harvard School of Public Health. In South Africa he carried out a number of nutrition and health surveys, and he was in charge of an experimental Health Centre in Cape Province, where he carried out a combined preventive health service and general practice. He also acted as nutrition officer and epidemiologist to the Union Government in Pretoria. He is a Fellow of the Royal Statistical Society. His research work includes studies on growth and nutrition in children, infectious diseases and medical care plans.

The University of Toronto has accepted the offer of the Graduates' Organization of

the School of Hygiene to provide an annual award of a Medal in memory of Donald T. Fraser, B.A., M.B., D.P.H., Professor of Hygiene and Preventive Medicine and Associate Director of the School of Hygiene. The winner is to be that student attending courses in the School of Hygiene considered most worthy of such recognition.

The first award was made at the Annual Dinner Meeting of the Canadian Public Health Association in Toronto on May 27, 1957, to Dr. Terje Due Strand, of Oslo, Norway. Dr. Strand came to the School on a World Health Organization Fellowship and was the outstanding student in the public health courses throughout the academic year.

British Columbia

Vancouver—where the mountains meet the sea—invites you to combine your holiday with attendance at your annual Convention. The Evergreen playground will be especially attractive in 1958 as British Columbia celebrates its Centennial year with almost weekly festivals. There is lots to see and do in Vancouver, B.C.

The General Arrangement Committee is already hard at work for the 1958 convention of the C.P.H.A. and the Western Branch of the A.P.H.A. under the chairmanship of Dr. Susan McMaster, D.P.H., President of the B.C. Branch of the C.P.H.A. and one of the health unit directors of the Metropolitan Vancouver Health Services. The Secretary is Dr. Anthony Larsen, B.A., M.D., D.P.H., Director of the Division of V.D. Control, Provincial Health Department. The Entertainment Committee has many pleasant surprises in store. The Publicity Committee has received great co-operation from the B.C. Centennial Committee. We hope for a large attendance from across the border.

On June 14 the Mayor of Penticton, Mr. C. E. Oliver, officially opened the new Community Health Centre. The "cutting of the ribbon" was performed by Miss Twiddy, who was one of the original public health nurses in the Penticton-Summerland area.

In the Metropolitan Vancouver Health Services the unifying of all sanitary inspectors was completed at the beginning of April. Dr. H. L. Bryson, D.V.P.H., is the director of the Division of Environmental Sanitation and has three assistants; Mr. W. Wookey, C.S.I.(C), Sanitation Control Officer, Dr. J. R. Steele, Food Control Officer and Mr. A. Mackie, C.S.I.(C), Quarantine Officer.

Saskatchewan

The Saskatchewan Hospital Association was host to the 12th Western Canada Insti-

tute for Hospital Administrators and Trustees combined with the biennial meeting of the Canadian Hospital Association. The sessions were held in Saskatoon with headquarters at the Bessborough Hotel. Meetings and exhibits were located at the Saskatoon Arena and the Badminton Club. Mr. E. F. Bourassa, Administrator, Grey Nuns' Hospital, Regina, and President of the Saskatchewan Hospital Association was Coordinating Committee Chairman and Mr. Philip Rickard, Executive Director, Saskatchewan Hospital Association was General Secretary.

Dr. F. Burns Roth, Deputy Minister, Saskatchewan Department of Public Health, presided over the Conference of State and Provincial Health Authorities of North America which convened in Toronto on May 26 and 27 at the King Edward Sheraton Hotel. This was the 71st annual meeting of the association which was founded in 1884. It was the major public health agency on this continent prior to the formation of the American Public Health Association and the Canadian Public Health Association. It is composed of heads of provincial and state departments of health and its primary function is to allow top level discussion of public health practice and administration. Dr. George Davidson, Deputy Minister, Department of National Health and Welfare, was the guest speaker who discussed "Our Mutual Problems and Responsibilities in Public Health".

Saskatchewan's fourth annual Farm Safety Week was held July 21-27. This event is sponsored by the Department of Public Health and has the co-operation of other Government departments and numerous voluntary and trade organizations. The department has approved cash awards totalling \$100 for the best community farm safety education activities conducted by any organization in the province this year. Formerly these prizes were awarded only for activities related to Farm Safety Week. They will now be awarded, together with merit certificates for the four local or district farm safety projects adjudged to have been most original, imaginative, and effective during the calendar year 1957. Since the Department of Public Health launched its safety program four years ago fatal farm accidents have decreased by 30 per cent. There has been a steady yearly decrease.

Two poison control centers have recently been established in Saskatchewan at the University Hospital, Saskatoon, and at the Regina General Hospital.

The award of a Geriatric Fellowship by the National Council of Jewish Women has

been made to Stanley Rands, deputy director of Psychiatric Services in the Saskatchewan Department of Public Health. The purpose of the award is "to permit qualified persons in positions of responsibility to become acquainted with newly developed methods in programs for the aged". Mr. Rands attended the Fourth Congress of the International Association at Merano, Italy, in July, and a further international symposium on problems of aging at Venice. Other centers he will visit are Bristol and Nottingham in England, Rutherglen in Scotland, and several centers in Holland and Switzerland. Included in his itinerary are the social rehabilitation unit at Belmont, Surrey, and the well-known community mental health service center of Amsterdam in Holland.

Mr. Lloyd G. Williams, research economist with the Saskatchewan Department of Public Health, was awarded a scholarship in the humanities and social sciences. A native of Saskatchewan, Mr. Williams' earlier academic awards included an honours bursary granted by the University after graduation in economics of \$800 for studies.

Dr. Czeslaw Lenk has recently been appointed medical health officer in charge of the newly established Rosetown-Biggart-Kindersley Health Region. He has already assumed his new duties, and organization of staff and services in the new health region is proceeding. Dr. Lenk received his medical degree in Cracow in 1939. From 1942 to 1949 he was in the service of the British Colonial Medical Service and worked as medical officer in Northern Rhodesia. Dr. Lenk worked with the Indian Health Service in North Battleford and at Fort Qu'Appelle and subsequently, in 1956, he attended the School of Hygiene at the University of Toronto, receiving his diploma in public health.

Manitoba

Dr. E. Bissett, Medical Director of the Northern Health Unit, has retired from public health in Manitoba. Dr. Bissett has been well known in the field of medicine in this province and in other parts of Canada for many years and has had an active interest in wildlife and the development of the north.

As part of the consultant dietitian services program a refresher course for cooks in small institutions was held at the University of Manitoba April 22 to May 2. It was a new venture for this province. Sponsored by the Manitoba Department of Health and Public Welfare in co-operation with the School of Home Economics, University of Manitoba, and the Nutrition Division of the Department of National Health and Welfare,

the course covered menu planning, special diets, food purchasing, storage and preparation, sanitation, work schedules and food service, and included field trips, cooking practice and film showings. Participants were limited to 24, most of whom were from hospitals. Instructors were Miss Dorothea Tripp and Miss Jessie Rae of the Nutrition Division, Ottawa.

The appointment has been announced of two new health unit medical directors: Dr. Shirley Parker, who has been posted to the Red River Health Unit and Dr. T. J. Bailey, who was posted to the Northern Health Unit, Flin Flon, on a temporary basis. Dr. Parker graduated in Winnipeg in 1955 and has been in private practice in MacGregor. Dr. Bailey is from Ayrshire, Scotland, and graduated from Edinburgh in 1955. Since coming to Canada in October he has been on the staff of the Misericordia Hospital.

Dr. T. D. Strand, Associate Medical Officer, Division of Epidemiology, Health Services of Norway, Oslo, Norway, visited the Manitoba Department of Health from June 2-13, after completing postgraduate studies in the School of Hygiene, University of Toronto.

The mobile bacteriological laboratory of the Department of National Health and Welfare was in Manitoba during the month of June. For the first two weeks it was at The Pas, headquarters of the Northern Health Unit. Later it moved to the Selkirk Health Unit area and operated from Winnipeg Beach. Dr. A. D. Tennant of Ottawa was in charge.

Mr. L. A. Kay has returned to Manitoba and resumed his duties as head of the Public Health Engineering Bureau, after a year in India. Mr. Kay assisted in setting up a public health engineering organization for the Health Ministry of the Indian Federal Government. His services were made available by the Canadian Department of Trade and Commerce under the Colombo Plan.

Ontario

A new health unit, the Pickering-Ajax Health Unit, was opened on July 1 with offices in Pickering under Dr. W. E. MacBean as Director.

Mrs. Marian Ross, B.Sc.(H.Ec.), has retired as nutritionist with the Ontario Department of Health.

Mr. John C. Scott has been appointed Director of Public Information for the Ontario Water Resources Commission. Mr. Scott has been Director of Publicity for the Ontario Department of Health for the past six years. His transfer from the Health Department to the Commission became effective July 2.

The highest international nursing award,

the Florence Nightingale Medal, has been awarded to Miss Helen McArthur, national director of nursing services of the Canadian Red Cross Society, by the International Committee of the Red Cross, Geneva. Miss McArthur served 18 months in Korea, where she was adviser to the Korean Red Cross and was responsible for channelling all relief material forwarded by societies throughout the world.

New Brunswick

Miss K. A. MacKenzie, dental hygienist, Moncton, will provide topical applications of sodium fluoride at the health department dental clinic to a group of 200 children during July and August. Each child will receive four applications of sodium fluoride during the two-month period and the treatment is being provided without charge. This is the first undertaking of the dental health division of the health department in the topical application of fluorides.

A great loss to the New Brunswick Department of Health and Social Services occurred upon the sudden death of Dr. Perry M. Knox on April 26 at Moncton.

Born in Pinehurst, N.S., he studied at Pictou Academy. His education was interrupted by service in the First World War, in which he served as a gunner in a Canadian Artillery unit overseas from 1917-1919. He later enrolled in Dalhousie University, Halifax, graduating with his medical degree in 1925. He interned at the Saint John General Hospital and then carried on postgraduate studies at the Saint John Tuberculosis Hospital.

During his long distinguished medical career, Dr. Knox received recognition from the medical profession for his skill and devotion to care and treatment of tuberculosis. Two years ago he was made a life member of the Canadian Tuberculosis Association. He also had been awarded the Licentiate of the Canadian Medical Council, specialist certification in internal medicine, by the Royal College of Physicians and Surgeons of Canada. He was a fellow of the Royal College of Chest Physicians.

Nova Scotia

The Nova Scotia Rehabilitation Centre reports encouraging growth in the first ten months of operation. They have treated 295 patients with 23 types of disabilities. The current case load is 169, receiving treatment in Physiotherapy, Occupational Therapy, and Speech Therapy. In addition, vocational and social counselling services are provided. The center is giving more than a thousand treatments a month. This is a significant development in services to the physically disabled in Nova Scotia.

Books and Reports

BASIC NUTRITION by E. W. McHenry, M.A., Ph.D., F.R.S.(C). Published by J. P. Lippincott Co., Philadelphia and Montreal, 1957. 398 pp. \$5.00.

The author is well known in Canada as professor of Public Health Nutrition in the School of Hygiene, University of Toronto, for his important contributions in nutrition research, his many scientific articles and for his work in voluntary health agencies in the field of nutrition. This textbook has been written for use by students in colleges and university schools of nursing. It is assumed that the students using this book have had at least elementary courses in biochemistry and physiology. The subject matter is devoted to a discussion of basic information in nutrition and practical use of such information. In introducing the subject, the author discusses in the opening chapters, hunger, appetite and nutrition requirements, methods of nutrition investigation and energy requirements. Subsequent chapters present carbohydrates and fats, protein and amino acids, nutrient elements and the vitamins. Dietary standards, nutritional value of foods, choice of foods, special diets, the evaluation of nutritional conditions and courses in the prevention of malnutrition complete the presentation. Detailed information concerning the composition of foods in average servings is presented in tabular form as an appendix.

This new book in nutrition will be greatly welcomed.

HANDBOOK ON POLIOMYELITIS by Joseph Trueta, M.D., D.Sc. (Hon.) Oxon., F.R.C.S. (Hon.) Canada, F.R.C.S.; A. B. Kinnier Wilson, M.A., M.B., M.R.C.P., D.P.M.; Margaret Agerholm, M.A.,

B.M., B.Ch. Published by Charles C. Thomas, Springfield, Ill., Ryerson Press, Toronto, 1956. 139 pp. \$4.50.

This monograph has been written for the general practitioner reviewing the relevant views which are held on the main problems related to poliomyelitis. The subject falls into three divisions, the virus, respiratory disorders and the paralysis of the locomotor muscles with its consequences. Each author has been responsible in the main for one of these sections, but the continuity of thought has been well preserved. This monograph is an up-to-date survey which will be particularly welcomed by medical officers of health.

PERINATAL MORTALITY IN NEW YORK CITY New York Academy of Medicine, Committee on Public Health Relations, Sub-Committee on Neonatal Mortality. Published for the Commonwealth Fund by Harvard University Press, Cambridge, Mass., J. Reginald Saunders Co., Toronto. 1955. 112 pp. \$2.75.

This volume contains the report of the second and final phase of the study of 955 stillbirths and neonatal deaths that occurred in New York City in 1950. The first report discussed hospital facilities for infant and maternal care and was published in 1952 under the title "Infant and Maternal Care in New York City". The Sub-Committee on Neonatal Mortality of the Committee on Public Health Relations of the New York Academy of Medicine enjoyed the services of Schuyler G. Kohl, M.D., Dr.P.H. in analyzing the data and preparing the final report.

Health departments will appreciate the publication of this important study.

